A PERFORMANCE APPRAISAL
OF
DAIRY INDUSTRY IN GUJARAT

A Thesis Submitted to
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For
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IN
COMMERCE

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C E R T I F I C A T E

This is to certify that Mr. Arvind M.Patel has carried out the Research work in this thesis on **" A PERFORMANCE APPRAISAL OF DAIRY INDUSTRY IN GUJARAT"** Under my guidance and supervision.

I also certify that this is his original work.

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D E C L A R A T I O N

I, the undersigned hereby declare that the research work presented in this thesis on **" A PERFORMANCE APPRAISAL OF DAIRY INDUSTRY IN GUJARAT"** is my original work and being prepared as per the guidance given by my guide.

I also declare that the research work has not been previously submitted to this or any other university for any degree or award.

Date : December 2005 Mr. Arvind M. Patel

Place : Rajkot Research Scholar

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PREFACE

India has emerged today as the largest producer of milk in the world. This has been achieved through "operation flood" one of the world's largest dairy development programmes, which created strong linkages between the rural producers and urban consumers. The Indian dairy sector contributes a large share in the agriculture at Gross Domestic Product (GDP). In the early 1990s, the Government of India initiated major trade policy reforms, which favoured increasing privatization and liberalization of all sector of the economy and dairy sector was no exception to this. Dairy industry, particularly, the handling, processing and marketing of fluid milk, which was reserved mainly for the co-operative sector, was delicensed in June 1991. The private sector companies including multi-nationals were allowed to set up milk processing and product manufacturing plants. The basic philosophy underlying delicensing was to encourage the competition in procurement and marketing of milk, thus increasing value for both producers and consumers. Although delicensing attracted a large number of players, concerns on issue like excess capacity, sale of contaminated / substandard quality of milk etc. induced the Government to promulgate the Milk and Milk Products order (MMPO) 1992, some provisions of which were again modified in April-1993. Now-a-days, Indian dairy industry will have to face the world dairy markets At the time in changing scenario Gujarat State is undergoing considerable modernization with latest technology. It will be right to study and analyse the performance of the district co-operative milk unions of Gujarat and to suggest measure to cost control and improve their profitability.

The present study deals with performance appraisal of co-operative dairy industry of Gujarat State which are engaged in processing and selling of milk and milk products. For these purpose nine leading co-operative dairy units are selected which are associated with GCMMF. For analyzing the performance of dairy units of Gujarat state, the data related to all the nine district co-operative dairy units for the past ten years viz. 1993-94 to 2002-03 have been collected and various techniques of measuring performance like. Common size Statement, Ratio Analysis, Value Added Statement and several statistical techniques have been applied to analyze and draw conclusions. During the course of study two hypotheses have been tested.

The present study has been divided in six chapters. The first chapter describes the history of Indian dairy sector and co-operative dairy sector. The chapter also analyses the trend in live stock population, milk production, consumption and trade and briefly reviews the dairy polices in India. The second chapter focuses on the research methodology of the study and conceptual frame work. The third chapter explores comparative study with common size income statement. The fourth chapter gives the analysis of value addition by units. The fifth chapters describes the ratio with analytical financial efficiency finally, the sixth chapter contains summary, findings and conclusions drawn as also suggestions offered during the courses of the study for improving the profitability of the selected dairy units.

I completed my B.Com with a first class in 1984 scoring 69.57 percent and M.Com in 1986 with a First Class scoring 62.50 percent. My professional career started with D.D.Thakar Arts & K.J.Patel Commerce College, Khedbrahma and commenced my service from 13th July 1987. I am privileged to have an unbeaten track record of 18 years of service with the College.

I completed my PGDCA again with a first class in 60.45 while in service with the college and CA Intermediate in 2002 for which I am grateful to the authorities of the college who support and encourage me at that time.

I express deep sense of indebtedness to my great teacher Dr. Shailesh Parmar, Associate Professor, Department of commerce & Business Administration, Saurashtra University who has guided me and taken interest in my work. As my guide this thesis which could not have been completed without excellent supervision extended by him. I never forgot his blessing.

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DATE : December 2005 (Shri Arvind M.Patel)
PLACE : RAJKOT (Research Scholar)

LIST OF ABBREVIATIONS

AI	Artificial Insemination
AMUL	Anand Milk Union Limited
APEDA	Agricultural and processed food products Export Development Authority
BIS	Bureau of Indian Standards
CMIE	Centre for Monitoring Indian Economy
CSO	Central Statistical Organization
DCS	District Co-operative Society
DCMPU	District Co-operative Milk Producers' Union
DMI	Directorate of Marketing and Inspection
DPS	Dividends Per Share
EEC	European Economic Community
EMSA	Erode Milk Shed Area
EPS	Earning Per Share
EVA	Economic Value Added
EXIM	Export Import
FAT	Fixed Asset Turnover
GATT	General Agreement on Trade and Tariffs
GCMMF	Gujarat Cooperative Milk Marketing Federation
GDP	Gross Domestic Product
GOI	Government of India
GVA	Gross Value Added
ICMR	Indian Council of Medical Research
IDC	Indian Dairy Corporation
IRD	Industries Development and Regulation
IRDP	Intigrated Rural Devlopment Programme
JIT	Just In Time
KDDC	Karnataka Dairy Development Corporation
LPD	Liter Per Day
MA	Ministry of Agriculture
MMPO	Milk and Milk Products Order
MPCS	Milk Producers Co-operative Society

MT	Metric Tone
MTPD	Metric tone per day
NCDFI	National Co-operative Dairy Federation of India
NDDB	National Dairy Development Board
NDRI	Northern Dairy Regional Industry
NSSO	National Sample Survey Organization
NVA	Net Value Added
OED	Oxford English Dictionary
OF-I	Operation Flood-I
OGL	Open General License
PER	Price Earnings Ratio
ROE	Return On Equity
ROI	Return On Investment
SMP	Skim Milk Product
STEP	Support to Training and Employment Programme for women
URA	Uruguay Round Agreement
URA	Uruguay Round Agreement
US	United States
VA	Value Added
VAS	Value Added Statement
VRS	Volentary Retired Scheme
WDP	Women Dairy Project
WTO	World Trade Organization

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CHAPTER : I
HISTORY AND DEVELOPMENT OF A DAIRY INDUSTRY

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HISTORY AND DEVELOPMENT OF A DAIRY INDUSTRY

1. Introduction :

Indian economy is basically rural. Agriculture is the main occupation of our rural area. The growth of agriculture still holds the key for economic and social upliftment of the rural people. The economic development of the country is largely linked with its rural development because majority of her population live in the villages. The rural devellers depends directly or indirectly on agriculture for live hood. The growth strategy, as recommended by the National Commission on Agriculture (1976) in its report, seeks to reserve a major share of dairy industry for the weakers of farmers and to adopt an integrated area development approach mainly based on a system of producers' co-operatives. The All India Rural Credit Review Committee[1] has also emphasized the need for providing subsidiary occupations to the peasants. Hence, the government through the Departments of Agriculture and Animal Husbandry have to encourage subsidiary and allied occupations to agriculture like dairy, fishery, poultry, sheep-rearing, etc. A dairy industry is a sub-sector of agriculture economy of India is most important for several reasons. Firstly, India has emerged as the largest producer of milk in the world with a total production of about 79 million tonnes in 2000. Followed by the United States with milk output of 76 million tonnes (FAO, 2001). Secondly, the energy significance of the dairying sector could be seen from the fact that 67% of energy used in agriculture is drawn from drought animals and 87% energy for the motive power in agriculture is also supplied by this sector. Thirdly, equal important human energy source is also drawn from this sector as 90% of the animal protein and 100% animal fat is derived by Indian vegetarian from the perfect food, i.e. milk, fourthly, most important is its rural development significance as it has the capacity to generate employment and adequate income for the vast number of rural poor classes. It has well documented fact that 70% to 75% households of small and marginal farmers and landless labourers who also are the target groups of the anti-poverty and rural development programmes are weelded to the dairying traditionally since ancient times. Finally, Dairying is a very significant sector to generate employment with lower unit cost of employment for the target groups of the rural India. For example, it is found that one rupee investment in the dairy sector could generate three rupees

worth employment. It has also been established as better source of employment as compared to other alternatives for example, an investment of 10 lakh rupees in dairying generate 290 person employment, while in the crop production same investment can generate only 120 person employment. Infact, in the best favourable environment dairying has found to provide as much as 78% of the total income to small and marginal farmers in some regions of Gujarat.

2. The Evolution of Organised Dairying in India :

On the recommendations of the Board of Agriculture, the Department of Defence established a few dairy farms, for the first time in India, in 1886 to supply milk and milk produce to the British troops.[2]

In 1914, the Department of Defence, on the advice of the Board of Agriculture conducted a preliminary study to assess the milk producing capacities of India cows and buffaloes. As the Board of Agriculture was very much impressed by the tremendous potentially of milk in India, it advised the Government, in 1916 to appoint an Imperial Dairy expert.

For the first time in India in 1919, the livestock census was carried out as a preparatory action for planned dairy development by the Board of Agriculture[3].

In 1920, William Smith, the Imperial Dairy expert recommended to the Government the establishment of a training centre to meet the man power requirements for managing the Defence Dairy Farms on scientific lines. He also suggested various steps to be taken with regard to scientific breeding, feeding and management of dairy farms.

Due to managerial problems, the military dairy farms at Bangalore, Wellington and Karnal were transferred to the Department of Agriculture in 1923. Later the Karnal dairy farm was converted into a cattle breeding farm and the Bangalore farm as the Imperial Institute of Animal Husbandary and Dairying in 1923. The Institute was given the responsibility of starting diploma courses in Dairying.

In 1929, the Imperial council of Agricultural Research (ICAR) was established which was later renamed Imperial Dairy Institute[4]. In 1931, this Institute was transferred to the Central Government Department of Education, Health and Lands.

In 1936, Dr. N.C. Wright, Director, Dairy Research Institute Scotland visited

India to review the progress of Dairying in the country. He stayed In India for about 4 years and some important observations and recommendations[5]. Which formed the basis for the development of dairy industry in the country.

In 1937, the first "Lucknow Milk Producers' Co-operative Union Limited" was established paving the way for organisation of such Unions in other districts and states.

The Banglore Institute of Animal Husbandry was renamed Imperial Dairy Research Institute on administrative grounds in 1941, subsequently, it was named "Indian Dairy Research Institute". The training and research activities were accelerated at the Institute and state level programmes were also encouraged.

In 1945, the chief executive officer of the milk marketing board of United kingdom was appointed as the milk marketing advisor to the Government of India. He recommended the setting up of "Milk Commissions" in each state with a commissioner, a Director and nominated Advisory Board[6].

Meanwhile, the farmine enquiry commission (1945) emphasised the need for developing feed and fodder supply for increasing milk production and recommended the adoption for mixed farming with a place for fodder and crop rotation. The commission stressed the need for increasing the milk production and consumption in the village as well as the need for milk supply in the urban centres.

The Aarey milk colony was set up by the Bombay Government under the Greater Bombay milk scheme in 1945. Likewise in Bengal in 1947, the greater Calcutta milk scheme was initiated. In 1946, the first farmers' Integrated Dairy Co-operative Unit (Amul) was established at Anand in Kaira district, Gujarat. Amul and Grater Bombay milk scheme helped the dairy industry in India to developed at a faster rate emphasizing development of the techniques of processing and marketing under Indian conditions.

After Independence, the Government of India did not take up schemes for development of dairying in the initial stages for the fact that the new government in India was still an infant. The dairying was not recognized as a separate head but it was treated only as part of animal husbandry. However Government have taken steps in this direction from the second five year plan period.

Under the subsequent five year plans the dairying has progressively been receiving more and more emphasis and getting larger allocation of funds. The ef-

forts of Government of India towards the development of dairying under five year plans significant. In the post-Independent era, the dairying is recognised as a source of additional income to the landless labourers and small and marginal farmers. But, dairying was introduced in India on a large scale by the British Government to meet the requirements of their army men.

3. Dairy Development In India :

3.1 Under Five Year Plans :

Planning is intended to "Promote a rapid rise in the standard of living of the people by efficient exploitation of the resources of the country, increasing production and offering opportunities to all for development – in the service of the community[7]. Thus, the planning in India is aimed at setting up the tempo of economic activity in general and industrial development in particular. The basic goal is to improve the standard of living of the people, through various welfare and socialistic measures[8]. India is one of the countries in the world which have a cultivable land of 137.1 million hectares out of the total geographical are of a 326.8 million hectares[9]. More than 70 percent of the Indian population who live in villages depend directly or indirectly on agriculture and allied sector for their livelihood. Therefore, the planner have been keeping this factor as primary in their consideration for planned economic growth. In fixing the priorities in the plan outlays, agriculture and animal husbandry are necessarily through of by the planners. The post-Independence period is significant because of the gradual recognition given to the dairy development by launching.

3.1.1 First Five Year Plan :

Initially, the programme during this plan period (1951-56) was related to supply of milk under hygienic conditions to big cities supported by the scheme of procurement of milk from rural areas. Work on dairy development was undertaken in the state of Andhra Pradesh, Bihar, Madhyapradesh, Orissa, Tamilndu and Uttarpradesh. Establishment of the 146 key village blocks with artificial insemination centres, 650 veterinary Hospitals and 25 Gosadans[10] also took place. The milk supply schemes in Bombay and Calcutta were also taken up. The total milk output in country was 18 millions MT during this plan[11]. The share of total spending going to animal husbandry and dairy activities was 1.21 percent.

3.1.2 Second Five Year Plan :

The second five year plan (1956-61) had laid down certain specific objectives relating to the production, marketing and consumption of milk firstly, emphasis was laid on quality control[12]. Secondly, it stressed on paying remunerative price to milk producer and a reasonable price to the consumer[13]. Thirdly, it favoured the organisation of village level milk producers' co-operative to supply milk to the city dairies, creameries and milk dairying plants[14]. During this plan, establishment of milk cattle in metropolitan cities on the Aarey (Bombay) pattern was also thought of. The dairy development programme envisaged establishment of a dairy factory at Anand, 36 liquid plants, expansion of existing 114 blocks with 670 Artificial Insemination centre, 34 new Gosadans, 248 Goshalas, 1900 Veterinary Hospital promoting 3 private enterpreneurs- Glaxo Levers and Nestle for establishing milk product factories[15]. The plan also included the expansion of NDRI, Southern Regional Station at Banglore[16]. During this plan period, 7 liquid milk plants were completed and 8 pilot milk schemes, 3 milk cremeries and 2 milk product factories were taken up. In addition, civil workers on 31 milk supply scheme were in various stages of completion . By 1959, there were 2257 co-operative milk supply societies and 77 milk supply unions in the country with a membership of 211131 which owned funds of Rs. 183 lakhs and sold milk and milk products worth Rs. 11.32 crores[17].

3.1.3 Third Five Year Plan :

The Policy of the Third five year plan (1961-66) was to develop dairy projects with emphasis on milk production in rural area linked with plants for marketing surplus milk to urban centres. The plan aimed at the establishment of 55 milk supply schemes for cities and industrial townships, 8 rural creameries, 6 milk product factories, 2 cheese factories, 4 cattle feed compounding factories besides the completion of spill over schemes of the second plan[18]. During the plan period, Madras milk supply scheme was taken up and 23 liquid milk plants and 27 pilot milk schemes were in operation and the daily average output of milk in the organised sector was 13 lakh litres[19]. 4 milk product factories and 3 creameries were also commissioned and work on the establishment of another 37 liquid milk plants was initiated[20]. During the third plan period, a major step was undertaken in the annals of dairying in India by establishing the National Dairy Development Board (NDDB) at Anand

(Gujarat) in 1965.

3.1.4 Fourth Five Year Plan :

The physical targets under forth five year plan (1969-74) envisaged setting up of 49 milk supply schemes, 11 milk product factories and 43 rural dairy centres[21] of these; 6 milk supply schemes 2 milk product factories and 32 rural dairy centres were commissioned. The gross breeding in cattle with exotic dairy breeds was taken up on a large scale during the plan by establishment frozen semen stations[22]. The project "Operation Flood" was conceived and formulated by the NDDB in this plan period. But as the NDDB, being a programme launching body, was not authorized to transact any financial and commercial activities, the Union Government set up the Indian Dairy Corporation (IDC) in 1970 at Baroda to execute this project with a financial grant of 95 crores[23]. The Government have sanction finances through the IDC only, The IDC act as canalizing agent for the import of cattle and buffaloes for breeding purpose[24].

3.1.5 Fifth Five Year Plan :

Towards the end of the year 1974, 100 dairy plants and 62 pilot dairy schemes were set up under Government and Co-operative sectors[25]. Of these 100 dairy plants, 94 were managed by Government either department or through newly created state Dairy Development Corporations[26]. The dairy plants in the Government sector and two out of the six dairy plants in the co-operative sector were concerned only with milk procurement, processing and sales[27]. These dairies did not take the responsibility of providing the inputs like feed, fodder, technical know-how etc. to other sister units for increasing milk production. By 1975, work on expansion of the capacities of the dairy plants in the four cities were completed and two large new plants were commissioned in Delhi and Bombay. Besides these large urban dairy plants, establishment of 13 new plants and expansion of the capacity of 7 existing rural dairy plants were also planned. An integrated project on cattle breeding, farm forestry and food for work programme was taken up to benefit mainly the weaker sections of farmers in the states of Gujarat, Maharashtra, Uttar Pradesh and Orrissa[28].

3.1.6 Six Five Year Plan :

It was decided that during these five year plan attention would also be given to feed and fodder production. Another important consideration would be the

organisation of producer oriented co-operative marketing systems. Necessary steps would be taken to make available reliable and timely livestock statistics to facilitate taking decisions on perspective planning besides their implementation, monitoring and evaluation of project of animal husbandry and dairying[29]. A new dairy development project for milk production and marketing on the lines of OF-I was started in Sikkim under this plan[30]. Three integrated cattle cum dairy development projects were started in the state of Rajasthan, Madhya Pradesh and Kranataka[31]. It was aimed to bring 10 million cows under cross-breeding programme against the coverage of about 3 million cows up to 1978-79 with the launching of project OF-II, the milk supply base would be widened. Taking into account the impact of this project, the level of milk production is anticipated to reach the level of 38 million tonnes. implying a growth rate at 4.8 percent by the end of the six plan(1985) [32].

3.1.7 Seven Year Plan (1985-90) :

The seventh plan observed that the co-operatives were playing an important role in dairy development. Under this plan it was proposed to develop National milk grid to the milk requirement of four metropolitan and other cities of India. The performance of co-operative dairy sector is remarkable which has given a new direction to dairy development in India. The stimulus given to the development of dairy industry by the dairy co-operative organisation has been one of the most important landmarks in the history of dairy development in India.

ANNUAL PLANS (1990-91 AND 1991-92)

A sum of Rs.985.30 lakh and Rs. 1140.90 lakh was spent on animal husbandry during two annual plans, 1990-91 and 1991-92, respectively. As far as dairy development was concerned the outlay was Rs.304 lakh and 375 lakh in 1990-91 and 1991-92 respectively. However, the actual expenditure on dairy development during these two years was Rs. 280 lakh and Rs. 350 lakh respectively. During these annual plan, milk procurement rose to 7.02 lakh metric tonnes, 15365 persons were trained and 104053 million tonnes of cattle feed was sold.

3.1.8 Eight Year Plan (1992-97) :

During the 8th five year plan Rs.230 lakh have been provided for the development of the dairy industries under the following heads.

Table 1.1

Outlay On Dairy Development in the 8th plan

Sr.no.	Programme	Outlay Rs. In Lakhs
1	Administration	70.00
2	Cattle Dairy Development	135.00
3	Others	25.00

*(**Source :** The Gujarat Economy, Dr. B.K. Bhatt, 2003)*

It is clear from the above table 1.1 that Rs.230.00 had been provided for the development of the dairy industry during the 8th five year plan, which was Rs.103.00lakh more than what was provided in the 7th year plan. In addition, the target for the installed capacity of the dairies at the end of the 8th plan is set at 41.0 lakh liters per day, which was 30.0 lakh liters per day in the earlier plan. The membership of the number of co-operative societies and their members were 9298 and 1568lakh in the earlier plan.

3.1.9 Nine Year Plan (1998-2002) :

The realities of the post-GATT world are reflected in the report of the Working Group on Animal Husbandry and Dairying for the formulation of the Ninth Plan. Animal health takes the place of pride and for good reasons too. Effective animal health disease management is critical not only from the point of view of livestock enterprises in reducing the economic losses arising from diseases but also crucial to enlarge exports of livestock products. The Ninth Plan has a very large programme for controlling major livestock diseases. Simultaneously, the focus of dairy development would be shifted from its role as a source of supplementary income to a more positive one as a viable enterprise to improve the quality of life of some 70 million farm households with little or no land. The proposed outlay of the Ninth Plan on animal husbandry and dairying is Rs. 19,650 million, of which Rs. 4,850 million (24.60%) would be allocated for dairy development. Ninth plan would be encouraging research in dairying.

3.2 Plan expenditure and operation flood programme :

The animal husbandry and dairying sector comes under the states for policy concerns, however, the central Government formulates the policies in this sector and implementation is largely left to the states. This sector has attracted the attention of the government because it provides income and employment opportunities in

the rural areas. The post-independence period is significant because of the gradual recognition given to the dairy development by launching a number of scheme like operation flood-I and operation flood-II on a massive scale to achieve "White Revolution".

Table 1.2
Plan Expenditure on Dairy Development in India
During Five Year Plan (1951-2002)

(Rs. In crores)

Plan Period	Total Plan Expenditure	Agricultural and allied activities	Expenditure on animal husbandry and dairying	Expenditure on Dairying
First Plan (1951-56)	1960.00	290.00	16.00	7.78
Second Plan (1956-61)	4672.00	549.00	33.47	12.50
Third Plan (1961-66)	8576.50	1089.00	77.00	33.60
Annual Plan (1966-69)	6625.40	1107.10	59.70	25.70
Forth Plan (1969-74)	15778.80	2320.40	154.26	78.75
Fifth Plan (1974-78)	39426.20	4866.50	232.46	54.03
Annual Plan (1978-80)	12176.50	1999.70	208.77	115.79
Sixth Plan (1980-85)	109291.70	13620.30	802.51	436.29
Seventh Plan) (1985- 90)	220216.30	27961.10	1280.50	603.41
Eighth Plan) (1992-97)	434100.00	56892.60	2838.32	3075.10
Ninth Plan (1997-2002)	859200.00	42462.00	N.A.	N.A.
Tenth Plan (2002-2007	318890.00 (E)	20668.00 (E)	2500.00 (E)	355 (E)

(E) = Expected
Source : *The Gujarat Economy, Dr. B.K. Bhatt, 2003*

The investment on animal husbandry and dairying programmes shows the importance given to this sector by the government for the increasing production and products. The investment pattern of animal husbandry and dairying during different plan periods is given in the table 1.2.

Table 1.2 show the allocations to Dairying total plan expenditure, Animal Husbandry, Agriculture and other heads during five year plans in India. The investment on animal husbandry and dairying programmes shows the importance given to this sector by the government for increasing production and productivity. The investment pattern of animal husbandry and dairying during different plan periods (1951 to 1997) is given in Table-1. The share of total spending going to animal husbandry and dairying activities ranged from 5.5 to 6.6 percent from the first five year plan to fourth five year plan to fourth five year plan. However during the seventh five year plan the investment in animal husbandry and dairying declined sharply to 4.3 percent and then marginally increased in the Eight five year plant. The percentage expenditure on dairy sector compared to the expenditure on animal husbandry and dairying ranged from 23.2 percent to 55.5 percent. Although, the dairy sector occupies an important position and its contribution to the national economy is significant, the plan investment made so far does not appear proportionate with its output and future potential of growth and development.

3.2.1 Operation Flood Period :

The strategy for organized dairy development in India was initiated in the late 1960s after the establishment of the National Dairy Development Board (N.D.D.B.) The Operation Flood (OF) programme was launched by the National Dairy Development Board to develop a viable and self-sustaining dairy industry in 1970. The key objective of the programme was to create a strong network and linkage between procurement, processing and distribution of milk by the co-operative sector and thus linking the milk-producing village with the major urban markets. The first phase of Operation Flood (OF-I) was launch 1970 following an agreement with the word food programme. The programme involved organizing dairy co-operatives at the village levels, creating physical and institutional in infrastructure for milk procurement, processing, marketing and production enhancement programmes/services at the union levels and establishing dairies in India's major metropolitan cities. During the first phase of operation flood, many states created Dairy Development Corporations to build co-operative structures and develop the dairy sector. However, these soon acquired the bureaucratic character of public sector organizations. The second phase of programme was implemented between 1981 to 1985 and covered 22 states/union territories. The third phase of

operation was launched on April 1, 1985 to consolidate the extensive milk procurement processing and marketing infrastructure created under of-I and of-II and finally completed on March-31, 1996 Table–1.3 gives salient features of Operation Flood Programme.

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Parameters	**Phase-I**	**Phase-II**	**Phase-III**
Commencement date	July 1, 1970	April 1,1981	April 1,1987
Completion date	March 31, 1981	March 31, 1985	April 30, 1996
Investments (Rs. Crore)	116.50	277.20	137.95
No. of milksheds	39	136	170
No. of DCS setup	13270	34523	72744
No. of Members (lakh)	17.5	36.3	93.0
Average milk procurement (mkgpd)	2.56	5.78	11.00
Liquid milk Marketing (lakh liters per day)	27.8	50.00	100.00
Processing Capacity			
Rural dairies (Llpd)	45.4	88.0	192.0
Metro dairies (”)	29.0	35.0	72.8
Milk Drying capacity (Metric tones per day)	340.0	507.0	990.0
Technical inputs			
No. of AI centres	4868	7802	10915
No. of AI done/year	820782	1329455	3943890
Cattle feed capacity	1.65	3.29	4.80

(□□□□) □□□□

mkgpd- Million kg per day

Llpd –lakh liter per day

MTPD = Metric tones per day

Source : *NDDB (2000)*

The Government of India launched the "Technology Mission on Dairy Development in August 1988 to support and supplement the efforts of operation flood programme, and to enhance rural employment opportunities and income generation through dairying. The stated objectives of the mission were.

- To accelerate the pace of increasing rural employment and income through dairy development – on co-operatives line.
- To ensure greater availability of milk and dairy products.
- To accelerate the place of application and adoption of modern technology to improve overall dairy productivity.
- To dovetail state government programmes in Animal Husbandry Dairying, Poverty, alleviation, IRDP etc, with that of the dairy co-operatives.
- To dovetail research programme of the central Government Research Institutes, State Agricultural Universities and National Dairy Development Board (NDDB) for optimum results.

These programmes transformed the Indian dairying scenario dramatically from an insignificant one of the world leader. But all this growth in dairy production took place largely under a regulated market environment, both domestically and externally. The future of the Indian dairy sector is now at cross roads, with increasing liberalization of this sector.

4. The Importance of Dairy Sector in India :

Maximum people of thickly populated India live in villages, majority for them are involved in agriculture the cattle animal is correlated with agriculture in India as the old method of cultivation is still vogue here. Rearing of cattle animal is also an additional source of income for the villagers in our country. India has vast resources of livestock, which play a vital rote in the national economy and also in the socio-economic development of rural householders. India has the largest population of cattle and buffaloes in the world and accounts for more than fifty percent of the buffaloes and twenty percent of the cattle population in the world, most of which are milk cows and milk buffaloes.

The Indian dairy sector contributes a large share in the agricultural Gross Domestic Product (GDP). Though the contribution of agriculture and allied sectors to the national GDP has declined during the last few decades, the contribution of livestock sector has increased from 4.8 percent in 1980-81 to about 6 percent in

1997-98. According to provisional estimates of the central statistical organization (CSO), the gross value of output from the live stock sector at current prices was about Rs. 111372 crore during 1997-98, which was about 26 percent of the total agricultural output. Milk and milk product constitute a major share in the value of output from the live stock sector and their share in total value increased from about 49 percent in 1950-51 to over 63 percent in 1995-96.

India was primarily an important dependent country, importing about 43 percent of milk solids in the total inputs dairy industry during 1950s and 1960s and the commercial imports of milk powder touched its peak about 53000 tonnes in 1963-64 to build a viable and self-sustaining national dairy sector. A decision was than taken to achieve self-sufficiency in milk production. In 1965 with the setting up of the National Dairy Development Board (NDDB) to oversee dairy development in the country. The "operation flood" programme, one of the world's largest and most successful dairy development programmes, was launched in 1970, with NDDB as the apex agency. These programmes resulted in as spectacular growth of milk production in the country. During the last two and half decades since the launch of operation flood, the milk production in the country has increased from about 22 million tonnes in 1970-71 to 78 million tonnes in 1999-2000 and tones in 2000-01 (GOI). This transition of the Indian dairy industry from a situation of net imports to that of world's largest producer has been led by the efforts of the National Dairy Development Board's Operation Flood. The commercial import of milk and other milk products was completely stopped during the period of 1975-76 to 1986-87 leading to a substantial saving in foreign exchange. The share of imported milk solids in the total input dairy industry declined to 13 percent in the 70s to nearly eight percent in the 80s. India's milk production grew a little over 4 percent annual growth rate, which far exceeded the global average of about one percent. This sustained increase in the domestic milk production increased the countries per capital availability of milk.

The future of the Indian dairy industry is promising and its growth potential is high as there is sufficient domestic demand and good scope for exports of milk and milk products. According to a consumer survey conducted by the National sample survey organization (NSSO), the consumption of live stock products, particularly milk, has gained popularity in the last two decades both in the rural and urban areas. A recent study by Delgado(etal) (2001) milk consumption in India

will increase to about 132 million MT, at an average annual rate of about 3.2 percent by 2020. Apart from this there is a good export market for dairy products.

The dairy sector can be divided into two sectors. Organized and unorganized. The unorganized sector consists primarily of middlemen who sell raw milk procured from the farmers and the milk supplied by these middlemen may be of poor quality. This sector controls nearly 88 percent of the marketed surplus of milk in the country. But the exciting dimension of India dairying is emergence of the organized sector as a force of growing significance. This sector handles only 12 percent of the total milk, but by value it accounts to over 20 percent of the output of the dairy industry. The organized sector can be dividing into three sectors, the government, co-operatives and private sectors. At present about 666 milk plants are registered in the country under milk and milk products order, out of these 212 are co-operatives, 390 in the private and the remainders are government dairies, Mother Dairy, etc. (GOI, 2001). The main role of the co-operative sector dairy plants has been to balance milk supply in the country. In 1995, the co-operative and public sector dairy plants accounted for about 87 percent of the total fluid milk volume processed in the organized sector and the contribution of the private sector was 13 percent. But under the changing market conditions the dairy co-operatives will have to go in for more processed and value added products, which command a higher price in the market.

4.1 An Overview of the Indian Dairy Sector :

India has emerged as the largest producer of milk in the world with a total production of about 79 million tonnes in 2000, followed by the united states with milk output of 76 million tonnes (FAO, 2001) The milk production in India accounts for more than 13 percent of the total world output and about 57 percent of Asia's production. The dairy development in India has been acknowledging world over as one of countries must successful development programmes. Despite these positive factors, the Indian dairy industry is still far behind the developed countries.

4.2 Live stock population and productivity:

India owns one of the largest live stock populations in the world, which play important role in our rural economy.

Table 1.4
Livestock Population – 1951 –1992 (All India Species-wise)

(In million numbers)

Species	1951	1956	1961	1966	1972	1977	1982	1987	1992
Cattle	155.3	158.7	175.6	176.2	178.3	180.0	192.5	199.7	204.6
Adult Female Cattle	54.4	47.3	51	51.8	53.4	54.6	59.2	62.1	64.4
Buffalo	43.4	44.9	51.2	53.0	57.4	62.0	69.8	76.0	84.2
Adult Female Buffalo	21.0	21.7	24.3	25.4	28.6	31.3	32.5	39.1	43.8
Total Bovine	198.7	203.6	226.8	229.2	235.7	242.0	262.4	275.8	288.9
Sheep	39.1	39.3	40.2	42.0	40.0	41.0	48.8	45.7	50.8
Goat	47.2	55.4	60.9	64.6	67.5	75.6	95.25	110.2	115.3
Horses & Ponies	1.5	1.5	1.3	1.1	0.90	0.90	0.90	0.80	0.82
Camels	0.6	0.8	0.9	1.0	1.1	1.1	1.08	1.0	1.03
Pigs	4.0	4.9	5.2	5.0	6.9	7.6	10.1	10.6	12.8
Mules	0.06	0.04	0.05	0.08	0.08	0.9	0.13	0.17	0.19
Donkeys	1.30	1.1	1.1	1.1	1.0	1.0	1.02	0.96	0.97
Yaks	Nc	Nc	0.02	0.03	0.04	0.13	0.13	0.14	0.06
Total Livestock	292.8	306.6	335.4	344.1	353.4	369.0	419.5	445.2	470.9
Poultry	73.5	94.8	114.2	115.4	138.5	159.2	207.7	275.3	307.1

Source : *Livestock Census, Directorate of Economics & Statistics, M/O Agriculture,GOI.*

Nc : Not Collected.

The 1992 livestock census shows that there are 204.6 million cattle, 84.2 million buffaloes, 115.3 million goats and 50.8 million sheep in the country. India ranks first in cattle and buffalo population and majority of these animals, due to low economic status of livestock owners, are reared under sub-optimal conditions. Among all livestock species in India, the bovine (cattle + buffalo) alone accounted for about 61 percent of the total livestock population of 470.9 million in 1992. India's livestock population continued to grow steadily and the cattle population increased from 155.3 million in 1951 to about 204.6 million in 1992, and in the case of buffaloes it almost doubled from 43.4 million in 1951 to 84.2 million in 1992.

There has been a radical shift in the priority of farmers from work animals to milk producing animals in the case of cattle. The proportion of breedable cows in the total cattle population increased steadily since 1972.

Table 1.5
Trends in Breedable Bovine Population, Yield, Milk Production and Processing, 1951 to 1992.

Categories	1951	1961	1972	1982	1987	1992
Breedable Bovine Population(millions)						
Crossbred Cows	Na	Na	Na	3.0	4.4	5.8
Desi Cows	46.4	51.0	53.4	55.7	55.6	52.1
Buffaloes	21.0	24.2	28.6	32.3	38.3	39.9
Total	67.4	75.2	82.0	91.0	98.3	97.8
Milk Yield (kg/year)						
Breedable Bovine (Total)	252	263	271	393	470	535.
Breedable Bovine(In milk)	583	593	600	802	883	1008.8
Milk Production (million Tonnes)						
Cow	7.7	8.7	7.5	14.0	20.7	2.34
Buffalo	9.3	11.0	14.8	20.7	24.0	31.04
Goat	0.4	0.7	0.7	1.1	1.4	2.5
Total	17.4	20.4	23.0	35.8	46.1	57.96
Per Capita Availability (Grams/day)	132	127	112	136	162	182
Milk Processing Throughput (million LPD)	0.2	1.7	3.5	5.0	10.1	Na
Throughput as % age of Total Milk Production	0.4	3.1	3.8	5.0	8.0	Na

Source : *GOI,1992*

Na **:** Not available

Between 1972 and 1992 the number of working male cattle population declined sharply from 71.2 million to 54.9 million. The proportion of desi cows declined and that of crossbred cows increased significantly from about 5 percent in 1982 to over 10 percent in 1992.

Table 1.6
State-wise Crossbred Cattle Population in India, 1987-1992

State	Male		Female		Total		Annual growth Rate (%)	
	1987	1992	1987	1992	1987	1992	Female	Total
Andhra Pradesh	131	108	259	376	390	484	7.74	4.41
Arunachal Pradesh	11	10	11	9	22	19	-3.93	-2.89
Assam	65	95	163	230	228	325	7.13	7.31
Bihar	80	92	93	99	173	191	1.26	2.00
Goa	30	37	132	196	162	233	8.23	7.54
Gujarat	1	-	4	6	5	6	8.45	3.71
Haryana	82	137	160	280	242	417	11.84	11.50
Himachal Pradesh	58	84	102	197	160	281	14.07	11.92
Jammu & Kashmir	203	368	324	425	527	793	5.58	8.52
Karnataka	123	148	596	478	719	626	-4.32	-2.73
Kerala	198	204	1503	1555	1701	1759	0.68	0.67
Madhya Pradesh	34	64	74	144	108	208	14.24	14.01
Maharashtra	-	385	-	1388	-	1773	-	-
Manipur	32	28	33	43	65	71	5.44	1.78
Meghalaya	5	1	14	14	19	15	0.00	-4.62
Mizoram	1	1	4	5	5	6	4.56	3.71
Nagaland	26	54	48	77	74	131	9.91	12.10
Orissa	161	172	402	428	563	600	1.26	1.28
Punjab	447	448	1132	1180	1579	1628	0.83	0.61
Rajasthan	10	20	63	101	73	121	9.90	10.63
Sikkim	18	19	25	26	43	45	0.79	0.91
Tamil Nadu	348	475	793	1364	1141	1839	11.46	10.02
Tripura	14	30	47	78	61	108	10.66	12.10
Uttar Pradesh	1668	1449	918	1049	2586	2498	2.70	-0.69
West Bengal	195	220	517	740	712	960	7.44	6.16
India	3951	4659	7462	10557	11413	15216	7.19	5.92

Source : *Animal Husbandry Statistic 1999, Department of Animal Husbandry and Dairying, Ministry of Agriculture (Govt. of India)*

The indigenous cattle population increased by less than one percent between 1987 and 1992, whereas the crossbred cattle population increased by about 33 percent during the same period. There is, however, considerable variation in the degree of changes across regions and states. The population of desi cows has declined significantly in the northern region and accounts for about 40 percent of all crossbred cattle in the country (Kurup, 2000). The southern region has the second largest population of crossbred cattle accounting for about 34 percent, followed by the West (15%) and lowest in the Eastern part (11%) . Among states, Kerala (842,000), Maharashtra (827,000), Tamil Nadu (725,000), Punjab (642,000) and Uttar Pradesh(585,000) have the largest number of crossbred milch cows and accounted for more than 60 percent of all crossbred cattle in the country in 1992.

Table 1.7
Livestock Population Growth Rates, 1951-1992

Species	1951 -56	1956 -61	1961 -66	1966 -72	1972 -77	1977 -82	1982 -87	1987 - 92
Cattle	0.43	2.04	0.07	0.24	0.19	1.35	0.74	0.48
Adult female Cattle	-2.76	1.52	0.31	0.61	0.45	1.63	0.95	0.73
Buffalo	0.68	2.66	0.69	1.61	1.55	2.39	1.71	2.08
Adult female Buffalo	0.66	2.29	0.89	2.40	1.82	0.76	3.78	2.28
Total bovine	0.49	2.18	0.21	0.56	0.53	1.63	1.01	0.94
Sheep	0.10	0.45	0.88	-0.97	0.50	3.53	-1.29	2.13
Goat	3.26	1.91	1.19	0.88	2.29	4.73	2.96	0.90
Horses & Poines	0.00	-2.82	-3.29	-3.93	0.00	0.00	-2.33	0.49
Camels	5.92	2.38	2.13	1.92	0.00	-0.37	-1.53	0.59
Pigs	2.18	1.20	-0.78	6.65	1.95	5.79	1.07	3.79
Mules	-7.79	4.56	9.86	0.00	2.38	7.63	5.51	2.25
Total livestock	0.93	1.81	0.51	0.53	0.87	2.60	1.20	1.12
Poultry	5.22	3.79	0.21	3.72	2.82	5.47	5.79	2.21

Source : *Basic Animal Husbandry Statistics 1999, Department of Animal Husbandry and Dairying, Ministry of Agriculture (Govt. of India)*

The growth in the buffalo population has been phenomenal in the last two and a half decades. The main reason for this growth is price incentive by the processing industry for buffalo milk. The proportion of buffaloes in milk to total breedable population increased from 52.7 percent in 1972 to about 61 percent in 1992 and adult females accounted for over 65 percent of all female buffaloes.

□□□□□ 1.8

□□□□□□□ □□□□ □□□□□ □□□ □□□ □□ □□□□□ □□□□ □□□□□□□□□ □□□□□□□□□, 1998

Country	Milk Yield (kg/year/cow)
Isarel	8615
United States	7767
Denmark	6716
Japan	6612
Poland	3375
New Zeland	3262
World	2026
India	877

Source : *FAO (1998)*

In the global context, the performance of Indian dairy sector appears impressive in terms of livestock population and total milk production, but very poor in terms of productivity. The main reasons for low yields are inadequate availability of fodder in all seasons, non-availability of good animal health and breeding services, credit etc. According to kurup (2000), about 30 percent of adult female population among cattle is unproductive. The average milk productivity per year, per adult breedable cow in milk (crossbred + local) increased from 528 kg in 1982 to about 830 kg in 1995. For crossbred cows, the average annual milk production per adult breedable female in milk was 2141 kg, 634 for local cows and 1355 kg for buffaloes in 1995. Average annual milk production per animal has improved substantially both in world average (2026 kg/year) and other countries like Israel (8615kg), United State (7767kg) and Denmark (6716kg)(Table 1.8).

□□□□□ 1.9

□□□□□□□ □□□□ □□□□□ □□ □□□□□□□□ □□□□□□ □□ □□□□□, 1992□93 □□/□□□

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		□□□	□□□□□□□
	□□□□	□□□□□□□□□	*
□□□□□□□	2.749	7.470	3.697
□□□□□□□	3.839	6.327	5.283
□□□□□□	1.863	5.372	3.574
□□□□□□ □□□□□□□	1.191	5.930	3.004
□□□□□□	3.268	7.399	5.698
□□□□□ □□□□□□□	1.932	5.164	3.541

Source : *FAO (1998)*

There are significant inter-state and inter-regional disparities in the milk yield. In general, buffaloes have higher yield relative to desi cows, but crossbred cows are more productive than both desi cows and buffaloes. The average productivity of local cows were highest in Haryana (3.8 kg/day), followed by Punjab (3.3 kg/day) and Gujarat (2.7 kg/day). In contrast, the average productivity of crossbred cows was highest in Gujarat (7.5 kg/day), followed by Punjab (7.4 kg/day) and Maharashtra (6.6 kg/day). In the case of buffaloes, average productivity was highest in Punjab (5.7 kg/day)(Table 1.9).

4.3 Contribution of Livestock and Dairy to the Indian Economy :

Dairying is the single most important segment of the Indian livestock sector contributing around 65 percent of live stock products. Milk production is the largest contributor in the agricultural sector accounting to 16.17 percent of the value of output from agriculture and allied activities. Indian dairying is characterized by very small holdings compared to large commercial dairy farms of developed countries and is largely a rural based activity based on family labour crop residues and natural grasses. A large proportion of livestock owning households comprise of small and marginal farmers and landless labourers. The distribution of livestock holding appears to be more equitable than land holding, as small and marginal rural households own about 65 percent of all milk animals leading to more equitable distribution of gains from the livestock sector.

Table 1.10

Share of Agriculture and livestock in country's cross Domestic product

(at current prices)

□□□□	□□□(□□□□□□□□□□□□)	□□□(□□□□□□□□□ □□□□□□)		□□□□□ □□ □□□□ □□□□□ □□□□□□ □□ □□□□□□□□□□□	
		□□. □□□□□	%□□□□□ □□. □□□□□		%□□□□□ □ □ □
1980□81	42466	33.41	5913	4.83	13.92
1990□91	135162	28.29	30828	6.45	22.81
1995□96	277846	26.00	64961	6.09	23.38
1997□98	352753	25.5	84072	6.07	23.83
1998□99	428680	26.6	96905	6.01	22.61

□□□□□□ : □□□ (2000)

During the last several decades the contribution of agriculture and allied activities to the gross domestic product of the country has declined. Agriculture, which used to account for about 55 percent of the gross domestic product in 1951-52, now accounts around 25 percent of the GDP. However, livestock sector has been among the few growth sectors in rural India and its contribution to the GDP has increased from about 4.8 percent in 1980-81 to 6.01 percent in 1998-99 at current prices . According to provisional estimates of the central statistical organization (CSO), the gross value of output from the livestock sector at current prices during 1994-00 was about Rs. 130,234 crore which was about 24 percent of the

total value of output from agriculture (CSO, 2001). The share of livestock in agricultural GDP has also increased from 13.92 percent in 1980-81 to 22.61 percent 1998-99(Table 1.10).

Among various livestock products, milk and milk products constitute a major share in the vales of output from the livestock sector. Its share in the total value from the live stock sector increased from about 49 percent in 1951-52 to over 64 percent in 1997-98 (Birthal, et. at, 1999). Apart from increasing the availability of milk and milk products, dairying has been considered one of the activities aimed at alleviating the poverty and unemployment especially in rural areas in the rainfed and drought prone areas. In India, about three fourth of the population live in rural areas and about 38 percent of them are poor. In 1986-87, about 73 percent of rural households owned livestock, small and marginal farmers account for three-quarters of these households, raising 56 percent of the bovine and 66 percent of the sheep population (GOI,1997) Milk production gives employment to more than 72 million dairy farmers. According to the National Sample Survey of 1993-94, the livestock sector provided regular employment to about 9.8 million persons in principal status and 8.6 million in subsidiary status, which together constitute about 5 percent of the total workforce (GOI, 2000). The progress in this sector will result in a more balanced development of the rural economy. Dairy products are a major source of cheap and nutritious food to millions of people in India and the only acceptable source of animal protein for a large vegetarian segment of Indian population, particularly among the landless, small and marginal farmers and women. Hence, dairying in India has a multifunctional role.

4.4 Milk Production and Consumption :

Milk production in India takes place in millions of rural households scattered across the length and breadth of the country. The performance of the indian dairy sector over the last three decades has been extremely impressive. The milk production in the country has more than trebled to 78.1 million tonnes between 1970-71 and 1999-2000 with an average increase of about 5 percent per annum.

Table 1.11
Trends in Production and Per Capita Availability of Milk in India, 1950-51 to 2000-01

Year	Milk Production (million tonnes)	Per capita availability (gm/day)
1550-51	17.0	124
1955-56	19.0	124
1960-61	20.0	124
1968-89	21.2	112
1973-74	23.2	112
1979-80	30.4	127
1980-81	31.6	128
1981-82	34.3	136
1982-83	35.8	139
1983-84	38.8	147
1984-85	41.5	154
1985-86	44.0	160
1986-87	46.1	164
1987-88	46.7	163
1988-89	48.4	166
1989-90	51.4	173
1990-91	53.9	176
1991-92	55.7	178
1992-93	58.0	182
1993-94	60.6	187
1994-95	64.0	194
1995-96	66.2	197
1996-97	69.1	202
1997-98 (Procisional)	70.8	204
1998-99 (Provisional)	74.7	210
1999-00 (Provisional)	78.1	214
2000-01 (Anticipated)	81.0	NA

Source : *Annual report 2000-01, Deptt. Of Animal Husbandry and Dairying, Ministry of Agriculture (Govt. of India)*

This can be attributed mainly to successful implementation of operation flood and other dairy development programmes implemented by the state and central government. The growth in milk production during the decade of 1970s was about 4.3 percent, which increased to about 5.3 percent in the 1980s. During the last decade (1990-98) India's milk production increased at a growth rate of around 4.3 percent, which in comparison to the world's rate of about 1 percent is much higher. The milk production was estimated at about 17 million tonnes in 1950-51 and rose to about 20 million tonnes in 1960-61 and 22 million tonnes in 1970-71. The annual compound growth rate in milk production daring the first decade after independence, beginning from 1950-51 was about 1.59 percent and this growth rate declined to 0.21 percent during the decade of 1960s. Between the third and fourth

five year plans (1966-69) the government of India made major policy changes in dairy development. Milk production in rural milk sheds through milk producer co-operatives and movement of processed milk to urban demand centres, became the cornerstone of government policy for dairy development. This single policy initiative of the government gave a boost to dairy development and initiated the process of establishing the much needed linkages between the producers and the consumers through a pricing, procurement and marketing system that resulted in the "**White Revolution**".

4.5 Regional milk production shift :

Table 1.12

State-wise Milk Production in India, 1971-72 to 1997-98

(Lakh MT)

State	1971-72	1981-82	1991-92	1995-96	1996-97	1997-98
Andhra Pradesh	11.3	24.2	30.57	42.61	44.70	44.75
Bihar	17.5	20.4	31.59	33.21	33.99	34.26
Gujarat	17.9	22.4	36.60	46.08	48.31	49.31
Haryana	15.1	22.7	34.58	40.55	42.04	40.82
Himachal Pradesh	2.7	3.4	5.92	6.76	6.98	7.14
Jammu & Kashmir	2.3	2.6	7.47	8.62	9.00	9.38
Karnataka	7.6	12.0	24.90	31.84	34.60	39.70
Kerala	2.8	9.5	17.90	21.92	22.58	23.48
Madhya Pradesh	11.7	23.9	47.90	51.25	52.24	53.78
Maharashtra	11.9	17.7	39.19	49.19	51.27	51.93
Orissa	3.4	3.2	5.06	6.48	6.87	6.70
Punjab	21.4	34.9	53.63	64.24	67.55	71.65
Rajasthan	25.4	33.0	44.63	54.49	58.73	55.00
Tamil Nadu	9.3	18.4	34.22	37.91	39.76	40.00
Uttar Pradesh	43.0	59.5	101.71	118.78	123.87	129.34
West Bengal	4.9	17.8	29.68	3.41	33.76	34.15
All India Total	225.0	343.0	558.39	661.87	690.66	706.23

Source : *CMIE, various issues*

Amongest the states in the country, Utta Pradesh stands first in milk production with an estimated production of 12934 thousand tonnes on 1997-98 followed by Punjab with 7165 thousand tonnes, Rajasthan (5500 thousand tonnes) and Madhya Pradesh (5378 thousand tonnes). During 1981-82 the top five milk producting states were, Uttar Pradesh, Punjab, Rajasthan, Andhra Pradesh and Madhya Pradesh, accounting for more than half of the total milk production. However in 1997-98, Andhra Pradesh lost its position among the top five producers. The top five milk producing states in 1997-98 were, Uttar Pradesh, Punjab, Rajasthan, Madhya Pradesh and Maharashtra. These states account for about 50 percent of milk produced in the country.

Table 1.13
Percentage of State-wise Share of Indian Milk Production

States	1971 -72	1981 -82	1991 -92	1993 -94	1995 -96	1996 -97	1997 -98
Andhra Pradesh	5.02	7.06	5.47	6.21	6.44	6.47	6.37
Assam	0.67	1.52	1.17	1.12	1.06	1.07	1.10
Bihar	7.78	5.95	5.66	5.30	5.02	4.92	4.88
Gujarat	7.96	6.53	6.55	6.49	6.96	6.99	6.99
Haryana	6.71	6.62	6.19	6.35	6.13	6.09	5.81
Himachal Pradesh	1.20	0.99	1.06	1.08	1.02	1.01	1.02
Jammu & Kashmir	1.02	0.76	1.34	1.29	1.30	1.30	1.34
Karnataka	3.38	3.50	4.46	4.51	4.81	5.01	5.65
Kerala	1.24	2.77	3.20	3.30	3.31	3.27	3.34
Madhya Pradesh	5.20	6.97	8.58	8.21	7.74	7.56	7.66
Maharashtra	5.29	5.16	7.02	7.01	7.54	7.42	7.39
Orissa	1.51	0.93	0.91	0.93	0.98	0.99	0.95
Punjab	9.51	10.17	9.60	9.85	9.71	9.78	10.20
Rajasthan	11.29	9.62	7.99	8.18	8.23	8.50	7.83
Tamil nadu	4.13	5.36	6.13	5.81	5.73	5.76	5.69
Uttar Pradesh	19.11	17.35	18.21	18.13	17.95	17.94	18.41
West Bengal	2.18	5.19	5.31	5.11	5.05	4.89	4.86
Others	6.80	3.56	1.14	1.10	1.03	1.01	0.50

Source : *Basic Animal Husbandry Statistics 1999, Department of Animal Husbandry and Dairying, Ministry of Agriculture (Govt. of India)*

The share of Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Tamilnadu and Uttap Pradesh in total milk production increased between 1981-82 and 1997-98.

Table 1.14
State-wise Number of Milch Animals in India, 1992

(Thousand Number)

State	Cattle (Cross Bred)			Cattle(Indigenous)			Buffaloes			% age
	In-milk	Dry	Total	In-milk	Dry	Total	In-milk	Dry	Total	
Andhra Pradesh	153	52	205	1269	902	2171	3192	1270	4462	6.97
Bihar	35	24	59	1767	3187	4954	948	1475	2423	7.58
Gujarat	95	26	121	1220	658	1878	2085	898	2983	5.8
Haryana	100	38	138	338	139	477	1496	511	2007	2.67
Himachal Pradesh	84	29	113	301	235	536	300	136	436	1.11
Jammu & Kashmir	167	49	216	417	264	681	253	127	380	1.30
Karnataka	184	74	258	1698	1698	3396	1220	985	2205	5.97
Kerala	583	259	842	467	292	759	73	32	105	1.74
Madhya Pradesh	59	28	87	4145	4284	8429	2088	1360	3448	12.20
Maharashtra	549	278	827	1999	2443	4442	1799	1141	2940	8.37
Orissa	153	85	238	1691	1986	3677	206	182	388	4.39
Punjab	456	186	642	262	124	386	2274	894	3168	4.28
Rajasthan	28	13	41	2100	2089	4189	2429	1340	3769	8.06
Tamil Nadu	506	219	725	1420	808	2228	979	441	1420	4.46
Uttar Pradesh	367	218	585	3356	2412	5768	6024	3388	9412	16.08
West Bengal	290	107	397	2943	1716	4659	162	52	214	5.37

Source : *GOI, 1998*

In contrast the share of Andhra Pradesh, Bihar, Haryana, Rajasthan and West Bangal declined during this period. In general the eastern states have very low milk production. The state of Gujarat, Haryana, Kerala, Punjab, Tamilnadu and Uttar Pradesh in total milk production is substantially higher than their share in breedable bovine population. On the other hand, Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra, Orrissa, Rajasthan and West Bengal have lower production of milk relative to their population .

4.6 Milk Products :

Over 50 percent of liquid milk in India is converted into various milk products before consumption. There are two basic categories of products, viz traditional Indian dairy products and western dairy products. The major traditional products are ghee (clarified butterfat), makkhan (butter), dahi (curd), lassi, srikhand, paneer, khog, chhana and other khog and/or channa based sweets. Most of these products are predominantly produced at home or in small industries or sweet shops but a small proportion of some of these traditional products, such as ghee, curd, paneer, srikhand etc. are now being produced in the organized sector. Western products include cheese, butter, ice-cream, milk powders, dairy whiteners, condensed milk, infant food, cream etc. Unlike traditional products, these western products are produced in the organized sector and their demand is increasing due to new product launches and high profile publicity created by the manufactures. The estimated production of various milk products in the organized sector including milk powder, infant milk food malted milk food, condensed milk and cheese is shown in table 1.15

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Year	Milk Powder*	Condensed milk	Malted food	Cheese
1980-81	75.2	-	-	-
1990-91	155.0	-	39.0	2.5
1991-92	150.0	8.1	41.0	2.5
1992-93	165.0	8.4	41.3	2.9
1993-94	185.0	8.1	32.3	3.1
1994-95	195.0	8.2	43.5	3.1
1995-96	200.0	9.2	48.0	-
1996-97	210.0	9.3	53.0	4.0
1997-98	215.0	7.8	55.0	4.5
1998-99	222.0	9.6	65.0	5.0
1999-2000	225.0	11.0	66.0	5.0

Source : *GOI (2000) CMIE (1997)*
Note *: * includes Infant Milk - data not available*

The production of milk powder including infant milk food is estimated to have increased from 75200 tonnes in 1980-81 to about 225000 tonnes in 1999-2000, at annual compound growth rate of about 9.6 percent for condensed milk, the production rose from 8100 tonnes in 1991-92 to about 11000 tonnes in 1999. The production of malted food more than double during the last ten years.

Annual has the largest share in butter (86%), processed cheese (63%), infant milk (68%), dairy whiteners (45%) in market in the country accounting to two-third of the total market[33]. However, industry also includes several private sector companies, like Britannia, Nestle India, Glaxo and Brettand Co., Hindustan Lever Limited (HLL) is a dominant player in the ice-cream sector, with 40 percent share of the 60 million litres a year (Organized market) and Amul is the second with 27 percent. Smithkline Beecham consumer Healthcare is the dominant producer of malted milk foods in India. Other major producers include Cadbury India and Jagatjit Industries. Production of ghee, which used to be produced in the traditional household sector, is moving into the organized sector.

4.7 Per Capital Availability :

Though India is the largest milk producing country in the world, its position in terms of per capital availability is quite low estimated at 214gms per day 1999-2000. The per capital availability of milk in the country declined during the pre-OF period 1950-70, from about 124gms per day in 1950-51 to 112gms per day 1970-71. But the dairy sector took a leap forward during the seventies, eighties and the nineties. The per capita availability of milk increased from 112gms in 1970-71 to about 211gms per day in 1999-2000. However, the present level of per capita availability is much below the world average of 285 gms and even less than 220gms recommended by the Nutritional Advisory Committee of the Indian Council of Medical Research (ICMR).

Table 1.16
State-wise Per Capita Availability of Milk in India, 1993-94 to 1997-98

(gm/day)

State	1993-94	1994-95	1995-96	1996-97	1997-98
Andra Pradesh	148	163	162	167	166
Arunachal Pradesh	62	64	119	121	118
Assam	78	79	95	80	82
Bihar	96	95	101	95	95
Goa	73	72	73	81	80
Gujarat	249	277	229	290	287
Haryana	605	625	618	621	592
Himachal Pradesh	330	324	329	332	330
Jammu & Kashmir	261	210	276	282	288
Karnataka	160	173	185	193	219
Kerala	181	190	198	196	201
Madhya Pradesh	195	199	199	193	196
Maharashtra	140	156	163	159	158
Manipur	118	88	80	81	79
Meghalaya	77	77	83	78	78
Mizoram	32	32	31	30	64
Nagaland	93	91	88	85	84
Orissa	47	47	49	53	51
Punjab	776	797	847	841	880
Rajasthan	292	280	294	325	299
Sikkim	186	192	204	192	191
Tamil Nadu	168	175	180	184	184
Tripura	33	35	35	34	40
Uttar Pradesh	207	209	216	231	227
West Bengal	119	123	130	123	123
India	**188**	**191**	**197**	**202**	**204**

Source : *Basic Animal Husbandry Statistics 1999, Department of Animal Husbandry and Dairying, Ministry of Agriculture (Govt. of India)*

There are wide inter state inter regional disparities in per capita availability of milk . The per capita availability of milk is as low as 20gms per day in the eastern region as against 400gms per day in the northern region. The per capita availability of milk is highest in Punjab (880gms/day), followed by Haryana (592mgs/day) and Himachal Pradesh (330gms/day) (Table 1.16). The milk availability is extremely low in the eastern region of the country. Considering the per capita milk requirement recommended by the ICMR at 220gms per day, only five states, namely Punjab, Haryana, Himachal Pradesh, Rajasthan and Gujarat, have per capita availability of milk above this level. There is also a wide disparity in consumption of milk between the rural and urban areas. The per capita consumption of milk in the rural areas is only 121gms per day as compared to 400gms in urban area.

5. Demand for milk and milk products in India :

Milk is consumed in India a variety of forms, either as liquid milk or as manufactured products, such as ghee, curd, butter, sweet etc. But the milk utilization pattern in the country is changing over the years. The share of liquid milk in total milk consumption increased from 39.3 percent in 1951 to 45.7 percent in 1995, whereas the share of ghee has declined from 39.3 percent to about 27.5 percent during the same period. The use of butter has increased marginally 6.0 to 6.5 between 1951 and 1995. The share of products showed a significant increase from barely 2 percent in 1951 to about 7percent in 1995, which might be attributed to an increase in production of western dairy products like ice cream, cheese, chocolates, milk powders and other dairy based products. As may be observed, the market is shifting in favour of cheese, butter, liquid milk and other products.

Describing the factors that affect demand for milk and milk products is very difficult, in part because of varied numbers of products that can be processed from milk and consumed. Factors that influence why one consumer would purchase skim milk are considerably different from factors that affect another's decision to buy butter. Economic theory states that demand for a particular product is a function of the price of the commodity, the price of close substitute, income and other socio-economic and demographic factors. Thus when estimating demand for milk products, one would expect an inverse relationship between demand and price of milk, and a positive relationship between demand and income.

The trend in the wholesale price indices(at 1980-81 prices) for dairy products as well as for "all commodities" during the period 1985-86 to 1997-98 is given in Table 1.17 . Between 1985-86 and 1997-98, the price of baby food has grown at the lower rare(9.16%), perhaps due to stagnation in the demand. The price of butter has grown at a higher rate(10.25%)due to strong growing demand. The comparison of the price indices of dairy products and "all commodities", showed that the prices of dairy products(9.44%) increased marginally higher than "all commodities"(8.96%). However, the comparison of wholesales prices indices for two periods,1985-91(pre-reform period) and 1991-96 (post-reform period) indicated that growth rates of all dairy product prices were lower in the post-reform period, except baby food.

Table-1.17

Wholesale price Indices for Dairy Products,(1981-82=100)

Product	**1985-86**	**1991-92**	**1997-98**	**Annual compound growth rate (%)**		
				1985-91	1991-97	1985-97
Milk	140.4	264.8	348.6	9.25	6.08	8.23
Butter	125.3	245.6	400.6	12.05	9.61	10.25
Ghee	114.3	227.2	342.7	10.70	8.09	9.59
Baby food	132.8	198.5	380.2	7.60	11.29	9.16
SMP	126.3	220.9	372.0	9.79	8.46	9.44
Dairy Pro	128.9	224.6	372.0	9.79	8.46	9.44
All Comm.	127.2	207.8	329.8	8.30	8.18	8.96

Source : *CMIE (1991),GOI(1999)*

The SMP prices showed a declined trend between January 1996 and march 1999. The comparison of SMP prices in India, with the world and the US. Market prices in United States are almost one-and-half times higher than world and Indian prices. The main reasons for a decline in SMP prices in India between 1996 and 1999 were an increase in subsidized imports due to low tariffs, large export subsidies given by the developed countries and drought conditions in some parts of the country. Moreover, the international prices of milk powders also witnessed a declining trend in the post-WTO period.

Given the high-income elasticity of demand for milk and milk products, the demand for these products is expected to grow at a very rapid rate. The expenditure elasticity for livestock products is high with a tilt in favour of rural areas, averaging 1.53 and 0.94 for milk in rural and urban areas, respectively (Bhalla et

al,1999). Further increase in per capita income and changing consumption patterns would lead to acceleration in demand for dairy and other livestock products in India and is thus expected to give a boost to this sector. The total consumption requirement of milk is likely to increases from 66 million tones in 1996-97 to 180.76 million tones in 2011-12 and the per capita consumption of milk is expected to increases from 70.25 kg per year to 152.15kg per year during the same period. Rosegrant at al.(1995) use the IMPACT model to project a 2020 demand of 160 million tones and Kumar (1999) projects a 2020 demand level 142.7 million tones. Delgado at al.(2001) projected that milk consumption in India is expected to grow from 60 million metric tones in 1997 to 132 million metric tones in 2020, a 120 percent increase , at an average annual rate of 3.3 percent . These projections also imply a significant increase in daily per capita consumption of milk. According to Delgado at al. (2001),the per capita consumption of milk in India is expected to increase from 62kg per year in 1997 to about 104kg in 2020,at an annual growth rate of about 3.2 percent. There are large differences in these estimates and the differences are mainly due to different assumptions of elasticity and population projections. However, one thing is amply clear that domestic demand for milk and milk products is going to increase substantially in the years to come. Apart from this there is a good export markets for dairy products. In order to cater to both domestic and external markets, the production of dairy products should be targeted for rapid growth. The Ninth plan target for milk production was set at 96.49 million tones envisaging an annual growth rate of 7.06 percent, which seems difficult to achieve.

5.1 Trade in Dairy Products :

Export earnings from livestock sector and related products increased to Rs. 2073 crore in 1998-99 as compared to about Rs. 792 crore in 1988-89 showing an annual compound growth rate of about 13 percent. The export of mear and meat product during 1998-99 was Rs. 772 crore in value terms, which accounted to about 37 percent of the total export from the livestock sector leather and leather products accounted to Rs. 1129 crore (about 54 percent). Export of dairy products is negligible.

Table 1.18
India's Imports of Milk and Milk Products, 1990-91 to 1996-97

(Quantity,MT)

Product	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Skimmed Milk(Fat<1.5%)	405.0	198.0	4148.3	215.1	1103.0	282.7	670.3
Milk food For babies	116.7	59.4	102.5	9.1	0.0	0.0	1.1
Other milk powder	0.0	52.5	0.0	350.5	27.6	0.0	674.9
Milk & Cream in powder,granules	0.0	0.0	139.1	0.0	3508.0	1.0	5.0
Milk for babies	5.4	0.0	53.0	0.0	8.3	111.4	11.0
Other Milk cream not containing sugar	0.0	0.0	191.2	3.0	324.0	0.0	0.0
Skimmed Milk without Sugar	91.0	152.0	33.0	0.0	0.0	0.0	0.0
Other Milk cream containing Sugar	476.4	743.0	6.3	368.9	41.7	9.2	60.4
Butter Oil	14.0	3128.0	0.0	4304.3	3885.0	0.0	0.0
Butter Fresh	0.0	0.0	0.0	0.0	0.0	36.7	0.0
Ghee	0.0	0.0	0.0	0.0	0.0	246.8	421.0
Other Fats	0.0	0.0.	0.0	0.0	0.0	53.2	470.4
Processed cheese not Grated/Powder	0.0	3.3	12.2	0.2	5.7	2.9	22.1
Other Cheese	0.0	3.7	16.7	32.5	66.5	36.8	24.8

Source : *DGCIS (1999)*

Table 1.19
India's Imports of Milk and Milk Products, 1990-91 to 1996-97

(Value in Rs.lakh)

Product	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Skimmed Milk (Fat < 1.5 %)	162.89	78.20	2605.50	158.06	807.64	196.40	412.14
Milkfood for Babies	52.52	31.45	133.39	7.57	0.00	0.00	2.38
Other Milk Powder	0.00	18.50	0.00	210.80	32.50	0.00	419.07
Milk & Cream In powder, Granules	0.00	0.00	39.56	0.00	2513.03	0.84	3.75
Skimmed Milk (fat > 1.5 %)	10.47	206.51	1.36	0.00	0.00	0.00	0.00
Milk for Babies	4.78	0.00	65.61	0.00	20.19	42.65	20.19
Other Milk Cream not Containing Sugar	0.00	0.00	242.23	2.34	260.20	0.00	0.00
Skimmed Milk without Sugar	39.64	18.38	19.28	0.00	0.00	0.00	0.00
Other Milk Cream Containing Sugar	128.57	363.76	0.51	191.93	28.40	9.67	72.19
Butter Oil	6.35	1769.83	0.00	2408.87	2421.51	0.00	0.00
Dairy Spreads	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ghee	0.00	0.00	0.00	0.00	0.00	151.05	184.71
Processed Cheese not Grated powder	0.00	6.35	12.45	0.16	12.01	3.75	21.91
Other Cheese	0.00	12.60	22.85	26.07	83.48	68.87	45.53

Source : *DGCIS (1999)*

Despite being the largest produces of milk in the world, India is very minor player in the world market. India had very little experience in the international trade of dairy products prior to the 1990s. The country was primarily an import dependent country till the early seventies and most of the demand supply gap of liquid milk requirement for urban consumers was met by importing butter/butter oil and milk powder . But with the onset of operation flood programme, the scenario dramatically changed and commercial imports of dairy products were stopped except occasional imports of very small quantities.

Table 1.20
Export of milk and milk products from India, 1990-91 to 1997-98

(Quantity,MT)

Product	**1990-91**	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**	**1996-97**	**1997-98**
Skimmed Milk(Fat < 1.5 %)	129.9	507.8	50.2	559.2	5947.6	2794.1	446.9	1353.3
Whole Milk (fat < 1.5 %)	31.0	47.2	0.7	0.4	0.0	0.0	0.0	0.0
Milk food for babies	25.8	162.1	394.6	203.6	25.6	49.8	66.9	9.0
Other milk Powder	195.1	91.7	15.5	138.6	559.6	167.0	21.9	27.6
Skimmed milk (fat > 1.5 %)	5.0	422.5	30.0	112.6	0.0	0.0	0.0	0.0
Wholemilk	0.7	28.4	130.5	161.1	1161.6	113.6	186.8	126.2
Milk for Babies	6.0	50.4	0.0	107.6	2.5	0.0	33.5	0.0
Other Milk Cream without Sugar	107.5	955.0	0.0	185.7	275.0	363.0	16.4	10.0
Fresh Butter	0.0	0.0	0.0	40.1	18.5	27.5	142.2	0.0
Ghee	0.0	0.0	0.0	375.2	613.1	535.6	312.6	0.0
Fresh Cheese	11.8	0.0	0.0	0.0	1.6	0.0	69.3	1.6
Processed Cheese not Grated/ Powder	0.0	0.0	0.0	0.0	0.0	0.0	1.6	3.9
Other Cheese	0.0	0.0	0.0	2.7	0.0	0.6	24.6	20.6

Source : *DGCIS (1999)*

Table 1.21
Exports of Milk and Milk Products from India, 1990-91 to 1997-98

(Value Rs.Lakh)

Products	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Skimmed Milk (fat< 1.5 %)	27.11	171.02	33.78	222.52	2178.71	27.94	250.02	790.14
Whole milk (fat < 1.5%)	8.43	18.93	0.57	0.36	0.00	0.00	0.00	0.00
Milk food For babies	9.14	75.16	242.86	133.05	16.91	37.90	97.35	7.26
Other milk Powder	47.71	43.09	10.62	73.73	338.83	86.42	12.47	18.19
Skimmed Milk(fat> 1.5 %)	3.13	113.97	17.80	40.96	0.00	0.00	0.00	0.00
Whole milk	0.36	14.06	91.32	78.61	444.18	66.57	107.24	85.51
Milk for Babies	3.01	29.45	0.00	76.19	1.92	0.00	45.57	0.00
Other milk Cream without sugar	34.94	411.83	0.00	133.54	95.09	181.81	25.27	4.60
Fresh Butter	0.00	0.00	0.00	28.67	16.60	19.26	152.85	0.00
Ghee	0.00	0.00	0.00	331.27	642.31	614.24	374.13	0.00
Fresh Cheese	5.98	0.00	0.00	0.00	0.84	0.00	48.20	1.79
Processed cheese not grated/powder	0.00	0.00	0.00	0.00	0.00	0.00	2.09	6.13
Other cheese	0.00	0.00	0.00	5.27	0.00	0.91	13.40	16.39

Source : *DGCIS (1999)*

India started exporting surplus dairy commodities, such as milk powders, ghee and butter in the 1990s. However, the exports of dairy products from India are negligible compared to both its own production and the international trade. The import and export of dairy products was regulated through the Agricultural and processed food products Export Development Authority (APEDA) and the National Dairy Development Board till early 1990, however, in the new EXIM polity announced in March-2001, the government removed all restrictions and allowed free import and export of most dairy products.

India's dairy product exports are occasional and primarily in the flush season. Although India exports a wide variety of dairy products, skim milk powder, ghee and butter oil and milk powder remain the major export items. The exports of skim milk powder increased from 129.9 tonnes 1991-91 to as high as 5947.6 tonnes in 1994-95, but fell to about 447 tonnes in 1996-97 and then marginally increased to 1353 tonnes in 1997-98. Other products showed a mixed trend, India has recently started exporting some varieties of cheese. The major destinations for Indian dairy products are Bangladesh(23.1%), UAE, the United States(15.6%)

and Philippines(8.9%).These export figures clearly demonstrate that Indian exports is still in its infancy. Commercial imports of dairy commodities, which was a regular feature till early 1970s comprising of about 50 to 60 percent of throughput, declined significantly in the 1980s and 1990s. However, the imports of milk powder and butter/butter oil increased marginally in the second half of the 1990s.

Table 1.22

India's Base and Bound Rates of Duty for Milk Products under WTO

Tariff item Number	Description of products	Base rate of duty Ad valorem (%)	Bound rate of duty Ad valorem (%)	Initial negotiating right
0402.10	In powder,granules or other solid forms of a Fat content, by weight not exceeding 1.5 %	0	0*	AU,US,CA,EC
0402.21	Not containing added sugar or other sweetening matter	0	0*	AU,US,EC
0402.29	Other	100	40	EC
0402.91	Not containing added sugar or other sweetening matter	100	40	EC
0402.99	Other	100	40	EC
0403.10	Yogurt	100	150	
0403.90	Other	100	150	
0404.10	Whey,whether or not concentrated or containing added Or other sweetening matter	100	40	EC
0404.90	Other	100	150	
0405.00	Butter and other fats and oils derived from milk	100	40	EC
0406.10	Fresh cheese (including whey cheese),not fermented And crud	100	40	AU,EC
0406.20	Grated or powdered cheese, of all kinds	100	40	AU,EC
0406.30	Processed cheese, not grated or powdered	100	40	AU,EC
0406.40	Blue-veined cheese	100	40	EC
0406.90	Other cheese	100	40	AU,EC
0106.00	Other live animals	100	100	

Source : *WTO (1996)*

Note * :

Recently, the bound rates of duty were renegotiated with the United States, European Union, and Australia under TRQ provision of WTO (Article XXVIII) and fixed at 15 per cent upto 10,000 tonnes and if imports exceed 10,000 tonnes the bound rate is 60 per cent.

India is among the few countries who have very low bound rates of duty in the WTO for major dairy products like milk powders, butter, butter oil, and cheese(15-40%) an against relatively high tariffs(100-150%) on products like milk and cream which are rarely traded in the international markets. It had adverse effects on the domestic dairy industry. The flow of subsidized imports increased in the late 1990s mainly due to low import tariffs on milk powders and other major

dairy products, which hurt the domestic industry. The international trade in dairy products is highly distorted because most of the developed countries give large export subsidies on dairy exports to dispose their surpluses. India is estimated to have imported about 18,000 tones of milk powder in 1999-2000 as compared to only 282 tones in 1995-96. A noticeable feature is that although imports of cheese are still low, it has grown rapidly at the rate of about 50 percent in the 1990s.

6. Economic Reforms and the Indian Dairy Industry :

Until 1991, the Indian dairy industry was highly regulated and licensed under the Industries Development and Regulation (IRD) Act. 1951. High import duties, restrictions on exports and imports, and stringent licensing provisions provided incentives to Indian owned small enterprises and cooperatives to expand production in a closed economy environment. However, in the early 1990s the Government of India introduced major policy reforms, which favoured increasing privatization and liberalization of all the sectors of the economy and the dairy industry was no exception. First, the dairy industry (handling, processing and marketing of fluid milk) which was mainly restricted to the co-operative sector was de-licensed in 1991. The de-licensing opened-up the industry to private entrepreneurs and multinationals. The parent companies of multinational corporations (for example Glaxo and Nestle) whose stake had been restricted to 40 percent were now allowed to raise their equity holding to 51 percent. The basic goal of delicensing was to promote competition in the procurement, processing and marketing of milk, thus increasing its value for both producers and consumers. Delicensing was also expected to increase the inflow of capital and new technologies. Although deli censing attracted a large number of players, concerns on certain issues like excess capacity, sale of contaminated/substandard quality of milk were raised. The Government of India then promulgated the Milk and Milk Products Order (MMPO) in 1992 as a part of the Essential Commodities Act, 1955, to regulate production, supply and distribution of milk and milk products. The key features of MMPO are as under :

6.1 Main Features of Milk and Milk Product Order (MMPO) 1992 :

- The MMPO requires no permission for units handling less than 10,000 litres of liquid milk per day or milk solids up to 500 tonnes per annum. MMPO prescribes State registration to plants producing between 10,000 to 75,000 liters

of milk per day or manufactured milk solids per year. Plants producing over 75,000 liters per day or more than 3750 tonnes per year of milk solids have to be registered with the Central Government.

- Under Section II of MMPO, new processors must develop their own milk shed or milk collection area and cannot encroach on co-operative milk sheds. If a shortage of milk occurs in one area and milk needs to be procured from other areas, it can only be procured through co-operative unions or the cooperative federations at prices set by the union or federation at a price mutually agreed upon, and in the absence of any such agreement, at the price at which the co-operative federation or union concerned sells milk to any other co-operative federation or union.
- The liquid milk shall not be used for making any milk products (even within the limits of capacity provided in the registration certificate) during such period as the Central Government may, by notification, in the Official Gazette specify.
- Licensed processors shall, within thirty days of the expiry of every quarter, submit to registering authority, the information on stock, procurement, production, and marketing to the government and allow it to enter and inspect private premises with the power to seize stocks if necessary.
- MMPO (5^{th} Schedule) lists Sanitary conditions required to be followed by the dairy industry. The premises in which milk products are being handled, processed, manufactured, stored or distributed by the holder of the registration certificate, and the persons handling them shall conform to the sanitary requirements and standards as specified in the Fifth Schedule.
- A Milk and Milk Product Advisory Board was created to assist aid and advise the central government on any matter concerning the production, manufacture, sale, purchase, and distribution of milk and milk products or on matters incidental there to". Members of the board include Secretary, Department of Animal Husbandry and Dairying, Ministry of Agriculture, Government of India (Chairman), Joint Secretary, Department of Industrial Development, Ministry of Industry, Joint Secretary, Ministry of Food Processing Industries, Additional Director General of Health Services, Ministry of Health and Family, Welfare, Director, National Dairy Research Institute, Managing Director, National Dairy Development Board, Managing Director, National Co-operative Dairy Federation of India (NCDFI). One representative each from four zones. Representatives

from the private sector, one representative from consumer organizations and Joint Secretary (Dairy Development), Department of Animal Husbandry and Dairying (Member Secretary). The board's power ranges from managing supplies across regions and establishing proper standards and norms for control and handling of milk and milk products, maintenance of high standards of sanitary and hygienic conditions in manufacture of milk and milk products and approving license applications for new dairy processing plants[34].

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□□□□□□□	138	257.9	100	196.9	34	63.6	272	517.69
□□□□□	74	26.4	290	104.5	30	9.10	394	140.09
□□□□□	212	283.4	390	301.14	64	72.70	666	657.78

Source : *Department of Animal Husbandry & Dairying, Government of India.*

The number of registrations granted to the private, co-operative and other sectors under MMPO till March 31, 2001 are presented in Table-1.22. It can be seen from the table that in private sector 390 plants with a total processing capacity of 301 lakh litres per day and while in co-operative sector 212 dairy processing plants with a total capacity of 284 lakh litres per day have been granted registration.. Moreover, nearly 80 percent of the private sector plants in terms of numbers and capacity are concentrated in four states of Haryana, Punjab, Uttar Pradesh and Maharashtra, which are India's major milk producing states.

Table 1.24
Milk processing capacities created under MMPO in major milk producing States, March 2001

State	Cooperative Sector		Private Sector		Other		Total		Milk Processing Capacity	%Processing capacity to milk production
	Number	Capacity	Number	Capacity	Number	Capacity	Number	Capacity	('000 tonnes)	%
Andhra Pradesh	13	2905	15	1443	1	200	29	4538	1709.82	34.98
Bihar	6	485	1	120	0	0	7	605	227.45	6.15
Gujarat	17	6280	3	690	7	670	27	7640	2872.26	55.37
Haryana	5	400	37	4590	2	130	44	5120	1924.86	40.19
Himachal Pradesh	3	44	2	345	0	0	5	389	146.24	18.99
Karnataka	14	1908	19	1110	1	400	34	3418	1285.00	27.74
Kerala	11	765	6	158	2	35	19	958	360.16	12.73
Madhya Pradesh	10	1250	4	950	2	20	16	2220	834.61	14.49
Maharashtra	35	4206	64	4875	38	3395	137	12476	4690.35	79.06
Orissa	8	212	0	0	0	0	8	212	79.70	10.11
Punjab	13	1630	32	3955	0	0	45	5585	2099.68	26.22
Rajasthan	14	1337	16	1347	0	0	30	2684	1009.05	15.51
Tamil Nadu	25	4365	13	475	0	0	38	4840	1819.60	40.23
Uttar Pradesh	32	2286	177	10191	0	0	209	12477	4690.73	32.71
West Bengal	2	216	3	90	2	820	7	1126	423.32	11.63
All India	212	28394	392	30339	64	7270	668	66003	24813.83	31.41

Source : *Ravindra et al.(2001)*

Liberalization of the Indian economy and the signing of the Uruguay Round Agreement (URA) of the General Agreement on Trade and Tariffs (GATT) in 1994 opened-up global competition in the dairy sector, exposing Indian smallholder producers to unfair and distorted market regimes. Subsequent to decanalization and becoming a Member of the WTO, the import and export of dairy products in India, which was restricted and canalized through the NDDB, APEDA till early 1990s, was moved to open general license (OGL) with low tariff rates (Table 1.25).

Table 1.25

Import Tariff and Trade Policy for Major Dairy Products in India

Commodity	Import tariff		Trade policy status			
	Base	WTO	1991		2001	
	Rate	Bound	Exports	Imports	Exports	Imports
Milk and Cream	100	100	Restricted	Restricted	Free	Free
Yogurt	100	150	Canalized	Restricted	Free	Free
Powdered milk (<1.5% fat)	100	15.60*	Canalized	Restricted	Free	Free
Powdered milk (>1.5% fat)	100	15.60*	Canalized	Restricted	Free	Free
Powdered milk (sweet) (>1.5% fat)	100	15.60*	Canalized	Restricted	Free	Free
Butter	100	40	Canalized	Restricted	Free	Free
Butter oil	100	40	Canalized	Restricted	Free	Free
Cheese	100	40	Canalized	Restricted	Free	Free

Source : *Gulati and Kelly (1999) and EXIM Policy 2000-01*
Note : ** 15% up to 10,000 tonnes and 60% above 10,000 tonnes negotiated with the EU, Australia and United States under TRQ provision of WTO (notified in July 2000)*

6.2 Regulatory Framework for the Dairy Processing Sector :

The Indian dairy industry has grown and diversified enormously in the last few years. To ensure proper development and growth of this industrial sector, the Government of India has instituted various law and regulations. The various regulations that govern the dairy processing industry can broadly be classified into Compulsory Legislation and Voluntary Standards.

(i)Compulsory Legislation :

6.2.1 The Prevention of Food Adulteration Act, 1954 :

This Act is intended to protect the common consumer against the supply of adulterated food. This specifies different standards for various food articles. The standards are in terms of minimum quality levels intended for ensuring safety in the consumption of these food items and for safeguarding against harmful impurities and adulteration. The Central Committee for Food Standards, under the Directorate General of Health Services, Ministry of Health and Family Welfare, is responsible

for the operation of this Act. The provisions of the Act are mandatory and contravention of the rules can lead to both fines and imprisonment.

6.2.2 Export (Quality Control & Inspection) Act, 1963 :

The Export Inspection Council is responsible for the operation of this Act. Under the Act, a large number of exportable commodities have been notified for compulsory pre-shipment inspection. The quality control and inspection of various export products is administrated through a network of more than fifty offices located around major production centers and ports of shipment. In addition, organizations may be recognized as agencies for inspection and/or quality control. Recently, the government has exempted agriculture and food products, fruit products and fish and fishery products from compulsory pre-shipment inspections; provided that the exporter has a firm letter from the overseas buyer stating that the overseas buyer does not require pre-shipment inspection from official Indian inspection agencies.

6.2.3 The Standard of Weights and Measures (Packaged Commodities) Rules, 1977 :

These Rules lay down certain obligatory conditions for all commodities that are in packed from, with respect to declarations on quantities contained. These Rules are operated by the Directorate of Weight and Measures, under the Ministry of Civil Supplies, Consumer Affairs and Public Distribution.

6.2.4 Milk and Milk Products Order, 1992 :

Milk and Milk Product Order, 1992 has been formulated under the provisions of the Essential Commodities Act. The main objectives of the Act are to regulate the manufacturing and distribution of quality milk and milk products. This Order provides for setting up an advisory board to advice the government on the production, sale, purchase and distribution of milk and milk products. Units with an installed capacity for handling milk of over 10,000 litres per day (LPD), or milk products containing milk solids in excess of 500 tonnes per year, are required to obtain registration under this order. Units handling between 10,000 to 75,000 litres of milk/day are required to obtain registration from the State Government, while units handling more than 75,000 LPD milk are required to obtain registration from Department of Animal Husbandry, Government of India.

6.2.5 Pollution Control :

(i) No Objection Certificate from the Pollution Control Board is a must.

(ii) Voluntary Standards

There are two organizations that deal with voluntary standardization and certification systems in the food sector. The Bureau of Indian Standards look after standardization of processed foods and standardization of raw agricultural produce is under the purview of the Directorate of Marketing and Inspection.

6.2.6 Bureau of Indian Standards (BIS) :

The activities of BIS are two fold the formulation of Indian Standards in the processed food sector and the implementation of standards through promotion and through voluntary and third party certification systems. BIS has own record, standards for most processed foods. In general, these standards cover raw materials permitted and their quality parameters, hygienic condition under which products are manufactured and packaging and labeling requirements. Manufacturers complying with standards laid down by the BIS can obtain an "ISI" mark that can be exhibited on product packages. BIS has identified certain items like food colors, additives, vanaspati, and containers for packing, milk powder and condensed milk, for compulsory certification.

6.2.7 Directorate of Marketing and Inspection (DMI) :

The DMI enforces the Agricultural Products (Grading and Marketing) Act, 1937. Under this Act, Grade Standards are prescribed for agricultural and allied commodities. There are known as "Agmark" Standards. Grading under the provisions of this Act is voluntary. Manufactures who comply with standards laid down by DMI are allowed to use "Agmark" labels on their products.

6.2.8 Other Government Regulations :

i. **Industrial License :**

No license is required for setting up a Dairy Project in India. Only a Memorandum has to be submitted to the Secretariat for Industrial Approvals (SIA) and an acknowledgement to be obtained. However, Certificate of Registration is required under the Milk and Milk Products Control Order (MMPO) 1992.

ii. **Foreign Investment :**

Foreign Investment in dairying requires prior approval from the Secretariat of Industrial Approvals, Ministry of Industry, as dairying has not been included in the list of High Priority Industries. Automatic approval will be given up to 51% Foreign Investment in High Priority Industries. In case of other Industries, proposals will be cleared on case to case basis.

iii. **Import of Capital Goods :**

Import of capital goods is automatically allowed if it is financed through Foreign Equity. Alternatively, approval is needed from the Secretariat of Industrial Approvals. The approval depends on the availability of Foreign Exchange Resources. Import of Second Hand Capital Goods is allowed subject to the following conditions:

a) Minimum Residual life 5 years.
b) The equipment should not be more than 7 years old.
c) A certificate from the Chartered Engineers of the country of origin certifying the age and the Residual life is to be produced.
d) Import will be allowed only for actual users.
e) Dividend Balancing.
f) Remittances of dividend should be covered by earnings from exports recorded in the years prior to the payment of dividend or in the years of the payment of the dividend.

7. Co-operative Dairy Sector in India :

Co-operation has been accepted as an important medium for regeneration of the country's socio-economic life. In the words of Margaret Digby "only through co-operative institutions can the common man influence the direction of social and economic change in a decisive manner. In fact, co-operation in India has been recognised as a part of the pattern of Indian socialism, especially interpreted in term of rural society".[35] Co-operative, thus has a very significant role to play in any programme of social and economic development of an under developed country like India. The co-operative from of organisation can make a significant impact on the society as well as on the country through its federal character which implies total involvement of each and every member, co-operation is a means of imparting valuable schooling in democracy and developing the faculties of the common man

in the conduct of trade and industry who had little opportunity otherwise.[36] Co-operation has enormous scope in a country like India where weak economic units predominate. Small units in agricultural business, vast numbers of small industrial enterprises, artisans, labourers an consumer units cannot derive many of the economies of large scale operations.

Organising dairy industry on co-operative lines has been avowed policy of the government. Because of their economic advances, democratic character and social purpose co-operative organisations are considered as prelude to all rural development of dairy industry.

8. History of Dairy Co-operative in India :

The Co-operative movement started in India in the last decade of the 19th Century with two objects in view, i.e. to protect the farmers from the hands of the private money lenders and to improve their economic condition. Madras province was the birth-place of this movement. With the setting up of an Agricultural Co-operative Banks there the movement took root in our Land and slowly gained strength. However, the growth of Co-operative movement in India during British rule was very slow and haphazard one. In most of the cases, the provincial governments took the lead. The foreign ruler had only made some committees or framed a few rules and regulations. But they did not take any wide-ranging programme to spread the movement all over the country.

The golden era of Co-operative movement began after India had own freedom. Within two decades of independence the membership of primary societies had increased four times while the share capital and working capital increased 23 and 31 times respectively.

The history of Dairy Development Movement in India is a new one. During the pre-independence period this movement was limited to a few pockets of Calcutta, Madras, Banglore and Gujarat. The most notable of this venture was Kaira District Co-operative Milk Producers' Union Limited of Anand, Gujarat. But after independence the National Government took great initiative in setting up new Dairy Co-operatives in many parts of the country. The National Dairy Development Board was set up to make the ambitious project a success.

8.1 Progress of Operation Food :

The Operation Food Programme was undertaken after the National Dairy Development Board has been formed in 1965. The programme aimed at bringing the shortage of milk supply in the four Metropolitan cities of Calcutta, Bombay, Madras and Delhi into agreement with the abundance of milk production in adjoining villages of the cities. Simply speaking, it tried to achieve a two-fold objective – increasing the production of milk and making equilibrium of supply and demand in the milk market. It was then decided that the Milk Co-operative formed on Anand pattern in all over the country should be reorganised, the excess milk would be procured at a fair price and be supplied to the cities. The Anand prattern had been accepted as the model because the Kaira District Milk Producers' Co-operative Union Limited (AMUL) was then recognised as the only ideal Milk Union of the country. In the initial stages of the programme India received a huge amount of butter oil and milk powder as gift from the European Economic Community (EEC).

The progress of the Operation Food programme all over India has been quite commendable. Before the implementation of the programme both the production of milk as well as the per capita milk consumption was too low. The position at present, has undergone a distinctive change. Apart from the increase of milk production and it's per capita consumption a great number of Village Milk Co-operative Societies have come up. The trend of keeping milk animals in a scientific method has registered an increase too. As a result, import of milk powder from foreign countries substantially dropped and after 1976, its import on a commercial basis stopped totally. However the country got little amounts of milk powder after that as gift. This testified to the fact that, with the inception of the Operation Food Programme, the Dairy Development Movement in India and also the Dairy Industry has made remarkable progress.

Despite that, the rate of progress has not been the same in different zones. While the Eastern zone is lagging fat behind the other zoned in this respect, the Western Zone has gone far ahead of others. In India, dairy co-operatives were formed only after 1912. The real beginning was made only after the second world war. The Khaira District Co-operative Milk Union Ltd. popularly know as AMUL, was the first producer oriented dairy organized in 1946. This milk union has proved that dairying can be best conducted if production, processing and marketing are owned and operated by the farmers themselves. The initiative for creating the milk

producer's co-operatives had came from the villagers of Khaira district whose milk untill then was being bought by traders who used to send it to Bombay through milk contractors. As the prices for milk procurement were not fixed by milk producers, the fluctuations in milk production during flush reasons resulted in a monopoly causing exploitation of producers. To extricate themselves from such exploitation, the farmers of Khaira sought the intervention of Sardar Patel, a prominet national leader who later become Deputy prime Minister.[37] He advised the farmers to set up a milk producers' co-operative. The architect of the first milk producer's co-operative society was Mr. T.D. Patel who joined as a young dairy engineer. V. Kurein, who was then posted at a government-run creamery in Anand merely to complete his contractual obligations for having been the recipient of Government scholarship to study in the U.S.A., to join them. Together, they streered the farmers of Khaira through a series of crises, ultimately resulting in "Anand Pattern" becoming a world-wide model of co-operative the philosophy of active local participation and aims at blending village social structure with the needs of development such a strategy recognizes the traditional forces of equilibrium with the village and adopt a system-wise approach to development.[38] Later on,, it was decided to transfer the 'Anand Pattern' to the parts of the country.

The dairy co-operatives are organised in a three tier structure. This structure is evolved by the National Dairy Development Board and is Known as "Anand Pattern". Milk production has increased substantially with the efforts of the NDDB's operation flood programme. Presently, more than 77000 primary milk co-operative with 9 million milk producers are covered under this programme and they collect 12 million litres of milk per day. The system enables through professional management, modern techniques and marketing. It has a direct impact-on the milk production of small farmers. It is widely accepted that milk co-operatives, both at the district level owning modern processing plant, and at the village level supplying milk to the district unit for processing, can be run profitably with the help of professional management. Moreover, such co-operatives has considerable impact on the rural life and prosperity. They can be considered as a powerful medium of rural trans-formation. Table-1.26 show the present position of milk co-operatives, its membership and milk procured and marketed by them during 1996-97.

Table 1.26

Dairy Co-operatives in India at a Glance

Co-operative (1996-97)	(value Rs. in million)
Number of Dairy co-operatives	77993
Anand pattern co-operatives	74348 (95%)
Membership (million)	9605
Share capital	Rs. 1780.20
Working capital	Rs. 6827.4
Average milk procured per day(000Ltr.)	12261
Number of milksheds (Union)	170
Liquid Milk Marketed per day (000Ltr.)	10500
Processing capacities (000pd)	26500
a. Rural Dairies	20450
b. Metro Dairies	725
Increase in Average Yields(1992)	
a. Cow (1 pd)	504
b. Buffalows (1 pd)	866

Source : *Indian Co-operative movement & profile, NCVI, New Delhi, 1998.*

The trend of Dairy co-operatives over the last decade shows a satisfactory increase both in the membership and production of milk. About 95% of the co-operatives have adopted Anand pattern and have covered more than 9.6 million milk producers. There is a three tire structure for milk purchase, sale and processing in co-operative sector with primary milk producers co-operative societies at village level and their district federations engaged in purchase; sale and processing of milk products. The state level milk marketing federation deals in pricing, distribution and sale policies as well as its business dealing on behalf of milk unions. Milk unions provide cattle feed, extension, services, veterinary services and hygiene services including artificial insemination services milk producers co-operative societies. Some of the milk unions having their own cattle feed factories.

8.2 Geo-graphical Back Ground of Gujarat :

At present, Gujarat state has 25 districts including 19 old districts and newly created 6 districts. According to 1991 population census there were 184 talukas in Gujarat, to which 42 new talukas were added during 1996-2001. Thus, there are

226 talukas, 18622 villages and 242 towns, 27 cities and 6 municipal corporations in Gujarat. According to 2001 population census, the state of Gujarat occupies 10th rank among the state with a population of 4.84 crores, and this figure does not includes those earthquake affected areas in which census had to be post-phoned. The area of the state is 1,96,024 squre kms. the density of population in Gujarat is 258 per sq.km.(including estimated population earthquake affected areas) which is less than the density of India (324). The literacy rate in the state was 61.29 percent in 2001 and in the case of males was 80.50 percent and of female 58.60 percent.

In 1999-2000 Gujarat registered a full of 26 percent rainfall. During 2000 monsoon, all the districts received less than normal rain fall resulting in shortage of agricultural commodities in many districts. Most of the areas in Gujarat have suffered heavy loss of agricultural production due to in sufficient rain. During 2000-2001, the total loss of kharif crops was more than Rs. 6881 crore. The area covered by forests is 19639.59 kms. which is 10.02 percent of the total geographical area of the state.

8.2.1 Contribution of Co-operative Sector in Milk Producing in Gujarat :

Cooperative enterprise is a business entity with certain eternal values. It is voluntary and democratic association of human being with common needs fore promoting their economic interests on basic of equality and equity. It represents collective action and collective responsibility. In a co-operative every member gets equal opportunities. It is a socio economic organisation and has certain distinct features which differentiate from other form of economic entities. Gujarat is the pioneering state for milk production in the co-operative sector. The Gujarat Co operative Milk Marketing Federation (GCMMF), under the brand names Amul and Sagar sell their products not only in Gujarat but also in entire India. Moreover, the milk co-operative societies at the district level sell milk and milk products in the districts. Gujarat has capacity to process 89 percent of its milk production. GCMMF is the leading institution in the co-operative sector as far as milk production is concerned. There is three tier structure for milk purchase, sell and processing in co-operative sector with primary milk producer co-operative societies at village level and their district federations engaged in purchase, sale and processing of milk products. The state level milk marketing federation deals in pricing, distribution and sale policies as well its business dealings on behalf of milk unions. Milk unions

provide cattle feed, extension services, veterinary services and hygiene services including artificial insemination services to the she-buffalos and cows of farmers through milk producer co-operative societies. Some of the milk unions are having their own cattle feed factories.

The structure of co operative of co operative dairy sector in Gujarat in 1998-99 is as follow

Total milk procurement

By GCMMF

1468 mil. Ltr.

District level milk societies

Total nos. 15

Co operative societies at village level.

Total nos.10364

Milk producing members

Total nos.20,84,536

The pictorial table shows that during 1998-99,there were 10364 co operative societies and 20,84,536 members engaged in milk production in the co-operative sector in Gujarat. There were 12 district level milk union, all of which together contributed 1468 milliliters of milk. The total sales value of this quantity is Rs. 22192 million.

8.2.2 Position of Gujarat In Dairy Development :

In 1998, Gujarat produced 4.8 million metric tones of milk and its rank was 6th among all state. The largest milk produces state is Uttarpradesh which produces 12.9 million tons of milk. In Gujarat, the highest daily milk consumption is in Ahmedabad centre (767000 liters) then comes Surat centre with 406000 litres and Baroda centre daily consumption of 280000 liters.

The highest milk production in Gujarat is in Mehsana (1452 thousand liter per day). Then it is Kheda center with daily production of 1141 thousand liters. The production of milk in other centre and their percentage to the total state production are shown in table 1.27.

Table : 1.27

Important Milk producing center in Gujarat 1995.

Centre	Production In '000Liter per day	Percentage
Mehsana	1452	13
Kheda	1141	10
Banaskantha	892	08
Ahmedabad & Gandhinager	806	07
Sabarkantha	732	07
Junagadh	721	06
Bhavnager	716	06
Rajkot	586	05
Panchamahal	578	05
Vadodara	558	05
Kutchh	372	03
Others	2446	25
Total	11000	100

Source : *GOI*

9. History & Development of the units under study.

9.1 The Sabarkantha District Co-Operative Milk Producer's Union Ltd. Himmatnager (SABAR DAIRY)

The Sabarkantha district came into existence after India became independent by merger of 29 small states which included Idar state of Mahikantha agency. The name "Sabarkantha" was given by virtue of its location on the bank of river sabarmati. It is situated in the north eastern part of Gujarat state, between 23 altitudes and 72latitude. The total number of breedable cows and buffaloes in the

district is 1.10 lakhs and 2.08 lakhs respectively, Having such a large number of cattle in the district and success of “AMUL” such a large number of cattle in the district through co-operative sector.

The Sabarkantha District Co-operative Milk Producers’ Union limited, (Sabar Dairy) was established in the year 1964. The milk union started collecting raw milk from 19 primary co-operative milk societies on 29-10-1965 and started supplying it without any process to MUNICIPAL DAIRY, Ahmedabad (now known as ABAD DAIRY run by Gujarat dairy development corporation). Municipal dairy being a consumers oriented dairy they could not accept more quantity of milk during the flush season. This resulted in rotational stoppages of milk collection from societies during flush season. The milk union could not expand its activities for the first seven years due to inadequate financial resources. In the year 1971 under OPERTAION FLOOD-I programme of Indian Dairy Corporation (A Government of India undertaking) a dairy project was sanctioned for handling 1.50 lakhs liters of milk per day. The total cost of the dairy plant was rs.2.52 corers which were received from Indian Dairy Corporation through government of Gujarat. The milk union acquired about 40 acres of land on national highway no-8, near village Boria, which is six kilometers away from Himmatnagar. The foundation stone of SABAR DAIRY PROJECT was laid by Dr.V.Kurien, Chairman, National Dairy Development Board and Indian Dairy Corporation on 11-06-1971. The reception and pasteurization of milk was started on 12-05-1973. The condensing and spray drying plant was commissioned in the year 1974. Looking to the potentialities of the milk collection, dairy plant was expanded so as to handle 4 lakhs liters of milk per day under OPERTAION FLOOD-II programme of Indian Dairy Corporation. The information regarding milk procurement, number of societies and number of members of last 10 years of The Sabar Dairy are as under.

Table : 1.28

Sabar Dairy, Himmatnager

Years	Nos. of Society	Index Base year 1993-94	Nos. of Members	Index Base year 1993-94	Milk Procured in Lakhs Kg.	Index Base year 1993-94
1993-94	1305	100	182000	100	1552.02	100
1994-95	1315	101	200482	110	1376.57	89
1995-96	1325	102	201990	111	1509.49	97
1996-97	1554	119	202625	111	1928.45	124
1997-98	1574	121	206700	114	1980.12	128
1998-99	1581	121	225345	124	2076.03	134
1999-00	1591	122	237078	130	2283.58	147
2000-01	1601	123	238590	131	2217.17	143
2001-02	1615	124	249887	137	2322.73	150
2002-03	1633	125	259150	142	2621.62	169

Source : *Computed from published report of Sabar Dairy*

It is evident from table 1.28 the total milk procured by the Sabar dairy has gone up from 155202000 kg. in 1993-94 to 262162000 kg. in 2002-03, recording a rise of 69 percent in 10 years. The total numbers of co-operative utpadak societies has increased from 1305 in 1993-94 to 1633 in 2002-03., registering a rise of 25 percent during this period. It is also observed that farmer members of utpadak societies has also gone up from 182000 in 1993-94 to 259150 in 2002-03 in 10 years.

9.2 The Mehsana District Co-Operatives Milk Producers' Union ltd., Mehsana (Dudh-Sagar)

Table : 1.29

Dudh-Sagar Dairy, Mehsana

Years	Nos. of Society	Index Base year 1993-94	Nos. of Members	Index Base year 1993-94	Milk Procured in Lakhs Kg.	Index Base year 1993-94
1993-94	1009	100	292800	100	2995.01	100
1994-95	1020	101	292800	100	2572.22	86
1995-96	1033	102	296500	101	2861.89	96
1996-97	1055	105	302800	103	3523.36	118
1997-98	1055	105	302800	103	3601.25	120
1998-99	1071	106	367924	126	3867.94	129
1999-00	1078	107	386555	132	4151.84	139
2000-01	1092	108	397673	136	4002.48	134
2001-02	1097	109	416182	142	4192.99	140
2002-03	1112	110	430388	147	4582.20	153

Source : *Computed from published report of Dudh Sagar Dairy*

It is evident from table 1.29 the total milk procured by the Dudh-Sagar dairy, Mehsana has gone up from 299501000 kg. in 1993-94 to 458220000 kg. in 2002-03, recording a rise of 53 percent in 10 years. The total numbers of co-operative utpadak societies has increased from 1009 in 1993-94 to 1112 in 2002-03., registering a rise of 10 percent during this period. It is also observed that farmer members of utpadak societies has also gone up from 289600 in 1993-94 to 430388 in 2002-03 in 10 years.

9.3 The Banaskantha District Co-Operative Milk Producer's Union Ltd., Palanpur (Banas Dairy)

Banaskantha is situated in north-border of Gujarat and south of Rajasthan. The Banaskantha District Co-Operative Milk Producer's Union Ltd. was registered on 31-3-69. Initially, the milk handling capacity of 1.5 lakh liters per day. In the year 1980, the union started dispatching milk to Mother dairy Delhi, through railway tankers. Amulya powder was introduced in the year 1986 and now the dairy produces "Amulya Sweetened milk powder, SMP whole milk powder, table butter, ghee, butter milk cassine, etc. The details regarding the unit of last ten years are as under.

Table : 1.30

Banas Dairy, Palanpur

Years	Nos. of Society	Index Base year 1993-94	Nos. of Members	Index Base year 1993-94	Milk Procured in Lakhs Kg.	Index Base year 1993-94
1993-94	820	100	n.a	n.a	887.73	100
1994-95	911	111	n.a	n.a	904.63	102
1995-96	987	120	n.a	n.a	1322.53	149
1996-97	1031	126	n.a	n.a	1773.30	200
1997-98	1087	133	n.a	n.a	1960.77	221
1998-99	1162	142	n.a	n.a	2204.91	248
1999-00	1193	145	n.a	n.a	2222.18	250
2000-01	1185	145	n.a	n.a	2235.96	252
2001-02	1208	147	n.a	n.a	2576.90	290
2002-03	1210	148	n.a	n.a	2902.40	327

Source : *Computed from published report of Banas Dairy*

Milk procurement is an important aspect of any dairy cooperative. It is evident from table 1.30 the total milk procured by the Banas dairy, Palanpur has gone up from 88773000 kg. in 1993-94 to 290240000 kg. in 2002-03, recording a rise of

227 percent in 10 years. The total numbers of co-operative utpadak societies has increased from 820 in 1993-94 to 1210 in 2002-03., registering a rise of 48 percent during this period.

9.4 The Surat District Co-Operative Milk Producer's Union Ltd., Surat (Sumul Dairy)

Surat is situated in the southern part of Gujarat. Sumul dairy was started in 1979 with the capacity of 50000 liters per day. Initially, it had to face steep opposition from the vested interest but, with help of members' faithfulness and commitment, it was able to overcome the obstacles and now, it is a strong with hearty 994 societies and 213710 members in 2002-03. The details regarding the unit of last ten years are as under.

Table : 1.31

Sumul Dairy, Surat

Years	Nos. of Society	Index Base year 1993-94	Nos. of Memebers	Index Base year 1993-94	Milk Procured in Lakhs Kg.	Index Base year 1993-94	Rate per kilo Fat Rs.
1993-94	849	100	158088	100	1122.80	100	132.46
1994-95	864	102	159927	101	1084.30	97	151.13
1995-96	900	106	195312	124	1184.07	105	176.75
1996-97	915	108	198506	126	1609.30	143	179.68
1997-98	940	111	203906	129	1877.96	167	184.67
1998-99	953	112	204205	129	1775.36	158	195.00
1999-00	960	113	205546	130	1856.81	165	199.00
2000-01	968	114	207258	131	2058.40	183	202.00
2001-02	977	115	209208	132	1981.63	176	205.00
2002-03	994	117	213710	135	2112.64	188	207.92

Source : *Computed from published report of Sumul Dairy*

It is evident from table 1.31 the total milk procured by the Sumul dairy,Surat has gone up from 112280000 kg. in 1993-94 to 211264000 kg. in 2002-03, recording a rise of 88 percent in 10 years. The total numbers of co-operative utpadak societies has increased from 849 in 1993-94 to 994 in 2002-03., registering a rise of 17 percent during this period. It is also observed that farmer members of utpadak societies has also gone up from 158088 in 1993-94 to 213710 in 2002-03 in 10 years. It is also observed that the rate per kilo fat has increased from Rs.132.46 in 1993-94 to Rs.207.92 in 2002-03, showing considerable growth.

9.5 The Valsad District Co-Operative Milk Producer's Union Ltd. Valsad, (Vasudhara Dairy)

Valsad District Co-operative Milk Producers' Union Limited has been registered in 1973 and initiated Dairy Development Activities on ANAND pattern since 1975. In 1981, Dairy plant of 30000 liters per day capacity was commissioned at Alipur village taking commercial loans from financial institution and assistance from the State Government. The milk producers of Valsad district particularly the women of small and marginal farmers and landless laborers have strengthened the movement called "VASUDHARA". VASUDHARA grew from strength to strength and had to again expand its capacity from 100 KLPD to 200 KLPD during April 2001. VASUDHARA has its area of operations spread between 2 districts called Navsari and Valsad. The details regarding the unit of last ten years are as under.

Table : 1.32

Vasudhara Dairy, Valsad

Years	Nos. of Society	Index Base year 1993-94	Milk Procured in Lakhs Kg.	Index Base year 1993-94	Rate per kilo Fat Rs.
1993-94	364	100	307.25	100	107.38
1994-95	466	128	336.45	110	119.48
1995-96	500	137	394.85	129	140.83
1996-97	517	142	506.55	165	142.08
1997-98	524	144	530.35	173	153.62
1998-99	564	155	539.10	175	156.60
1999-00	569	156	535.32	174	164.01
2000-01	582	160	591.52	193	170.95
2001-02	628	173	683.21	222	n.a
2002-03	665	183	763.68	249	n.a

Source : *Computed from published report of Vasudhara Dairy*

It is evident from table 1.32 the total milk procured by the Vasudhara dairy,Valsad has gone up from 30725000 kg. in 1993-94 to 76368000 kg. in 2002-03, recording a rise of 149 percent in 10 years. The total numbers of co-operative utpadak societies has increased from 364 in 1993-94 to 665 in 2002-03., registering a rise of 83 percent during this period. It is also observed that the rate per kilo fat has increased from Rs.107.38 in 1993-94 to Rs.170.95 in 2000-01, showing considerable growth.

9.6 The Bharuch District Co-Operative Milk Producer's Union Ltd. Bharuch, (Dudh-Dhara Dairy)

Bharuch District Co-operative Milk Producers' Union Limited has been registered in 1959 and initiated Dairy Development Activities on ANAND pattern. The milk producers of Baroda district particularly the women of small and marginal farmers and landless laborers have strengthened the movement called "DUDHDHARA". The details regarding the unit of last ten years are as under.

Table : 1.33

Dudh-dhara Dairy, Bharuch

Years	Nos. of Society	Index Base year 1993-94	Nos. of Members	Index Base year 1993-94	Milk Procured in Lakhs Kg.	Index Base year 1993-94
1993-94	228	100	37900	100	93.23	100
1994-95	228	100	39900	105	89.71	96
1995-96	228	100	40000	106	105.61	113
1996-97	261	114	61943	163	104.75	112
1997-98	241	106	61400	162	127.24	136
1998-99	267	117	61400	162	116.94	125
1999-00	254	111	32080	85	100.11	107
2000-01	267	117	32040	85	102.44	110
2001-02	281	123	32080	85	91.38	98
2002-03	310	136	36040	95	133.06	143

Source : *Computed from published report of Dudh Dhara Dairy*

It is evident from table 1.33 the total milk procured by the Dudh Dhara dairy, Bharuch has gone up from 9323000 kg. in 1993-94 to 13306000 kg. in 2002-03, recording a rise of 43 percent in 10 years. The total numbers of co-operative utpadak societies has increased from 228 in 1993-94 to 310 in 2002-03., registering a rise of 36 percent during this period. It is also observed that farmer members of utpadak societies has also went down from 37900 in 1993-94 to 36040 in 2002-03 in 10 years.

9.7 The Rajkot District Co-Operative Milk Producer's Union Ltd. Rajkot, (Gopal Dairy)

In the year 1956, the government of Gujarat has started milk conversion plant at Rajkot, with the help of UNICEF with major objectives of catering to the needs of the city population and meeting their day to day wholesale palatable milk requirement as also to provide nutritious diet to the under nourished children.

Initially the milk handling capacity of Rajkot dairy was 40000liters of milk per day and 2MT drying capacity of powder plant. It is located on Dudhsagar marg, near new powder house, Rajkot. The management had started two chilling centre, one at Vinchhiya and other at Wankaner. The main objective for establishment of these chilling centers was to increase the milk procurement and to reduce transportation cost.

Thus, after a long period of time, the management was in the hands of milk producers. It has got step by step progress. The details regarding the unit of last ten years are as under.

Table : 1.34

Gopal Dairy, Rajkot

Years	Nos. of Society	Index Base year 1993-94	Nos. of Members	Index Base year 1993-94	Milk Procured in Lakhs Kg.	Index Base year 1993-94
1993-94	267	100	30000	100	128.49	100
1994-95	270	101	30131	100	98.70	77
1995-96	277	104	28057	94	107.33	84
1996-97	296	111	29802	99	123.36	96
1997-98	305	114	30152	101	149.40	116
1998-99	326	122	31770	106	165.30	129
1999-00	354	133	33300	111	220.46	172
2000-01	354	133	37320	124	278.07	216
2001-02	396	148	40019	133	306.04	238
2002-03	408	153	40716	136	449.48	350

Source : *Computed from published report of Gopal Dairy*

It is evident from table 1.34 the total milk procured by the Gopal dairy, Rajkot has gone up from 12849000 kg. in 1993-94 to 44948000 kg. in 2002-03, recording a rise of 250 percent in 10 years. The total numbers of co-operative utpadak societies has increased from 267 in 1993-94 to 408 in 2002-03., registering a rise of 53 percent during this period. It is also observed that farmer members of utpadak societies has also gone up from 30000 in 1993-94 to 40716 in 2002-03 in 10 years.

9.8 The Baroda District Co-Operative Milk Producer's Union Ltd., Baroda (Baroda Dairy)

The Baroda District Co-operative Milk Producers' Union Ltd. was registered on 24 th December 1957. The foundation of 50000 LPD dairy plant was on 24th august,1962. In the year 19964-65, Milk distribution centers were started in an organized way and the union started its procurement from 120 milk co-operatives soci-

eties. The plant was inaugurated by Shri Morarjibhai Desai, the 10th finance minister of India on 25th April 1965. From 1998, various products from Baroda Dairy are exported to America and England. The details regarding the unit of last ten years are as under.

Table : 1.35

Baroda Dairy, Baroda

Years	Nos. of Society	Index Base year 1993-94	Nos. of Members	Index Base year 1993-94	Milk Procured in Lakhs Kg.	Index Base year 1993-94
1993-94	267	100	30000	100	519.00	100
1994-95	952	357	158116	527	490.00	94
1995-96	951	356	161348	538	586.00	113
1996-97	944	354	164376	548	586.00	113
1997-98	962	360	166977	557	662.00	128
1998-99	997	373	169382	565	688.00	133
1999-00	1025	384	171738	572	795.95	153
2000-01	1050	393	173108	577	922.27	178
2001-02	1083	406	176674	589	914.83	176
2002-03	1100	412	179517	598	1077.26	208

Source : *Computed from published report of Baroda Dairy*

It is evident from table 1.35 the total milk procured by the Baroda dairy, Baroda has gone up from 51900000 kg. in 1993-94 to 107726000 kg. In 2002-03, it was recorded a rise of 108 percent as compared to 1993-94. The total numbers of co-operative utpadak societies has increased from 267 in 1993-94 to 1100 in 2002-03., registering a rise of 312 percent during this period. It is also observed that farmer members of utpadak societies has also gone up from 30000 in 1993-94 to 179517 in 2002-03 in 10 years.

9.9 The Khaira District Co-Operatives Producer's Union Ltd. Anand (Amul Dairy)

The Khaira District Co-operative Milk Producers' Union ltd., Anand was organised in the year 1946 with the blessing of the Late Sardar Vallabhbhai Patel. The first meeting of the farmers of the Khaira District when it was resolved to organise the Dairy industry of the Khaira District along co-operative lines, was presided by Shri Morarji Desai. The union started with two village Milk Producers' Societies and began pasteurising milk for the Bombay Milk Scheme in June, 1948. At that time only 230 kg of milk per day was being handled. The co-operative movement amongst milk producers became very popular and the organisation grew

at a very rapid rate that we can see. The details regarding the unit of last ten years are as under.

Table : 1.36

Amul Dairy

Years	Nos. of Society	Index Base year 1993-94	Nos. of Members	Index Base year 1993-94	Milk Procured in Lakhs Kg.	Index Base year 1993-94
1993-94	943	100.00	513280	100.00	2773.60	100.00
1994-95	954	101.17	532670	103.78	2292.11	82.64
1995-96	962	102.01	542050	105.61	2362.66	85.18
1996-97	970	102.86	552626	107.67	2684.90	96.80
1997-98	989	104.88	559293	108.96	2413.40	87.01
1998-99	1005	106.57	568939	110.84	2367.65	85.36
1999-00	1017	107.85	573962	111.82	2711.00	97.74
2000-01	1028	109.01	576081	112.24	2778.41	100.17
2001-02	1026	108.80	577728	112.56	2586.92	93.27
2002-03	1033	109.54	583870	113.75	2579.58	93.00

Source : *Computed from published report of Amul Dairy*

It is evident from table 1.36 the total milk procured by the Amul dairy, Anand has went down from 277360000 kg. in 1993-94 to 257958000 kg. in 2002-03, recording a decrease 7 percent in 10 years as compared to 1993-94. The total numbers of co-operative utpadak societies has increased from 943 in 1993-94 to 1033 in 2002-03., registering a rise of 9.54 percent during this period. It is also observed that farmer members of utpadak societies has also gone up from 513280 in 1993-94 to 583870 in 2002-03 in 10 years.

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1. Introduction :

Performance measurement is not any easy subject. There is clearly a need to study and rethink what is meant by the performance of the firm and how to measure it. Performance has become the mantra of 1990s. Many firm claims to be running for performance and seek to measure their performance, improve performance and compensate their people for performance. How did the researcher come to the conclusion that an elemental conception of the firm is needed, that the problem is finding the activities the firm perform to add value for the customer and to generate revenues in excess of costs rather than finding better firm-level performance measures ? The researcher came to this conclusion mainly by struggling with anomalies, thing that did not make sense. A few of these anomalies bear mentioning. One anomaly was definitional. Look in the Oxford English Dictionary (OED) under performance as the researcher did. You will find nothing about organizational performance. Performance is theatrical, mechanical, or psychological. Performance, according to the OED, is what people or machine do. It is a functioning, not an economic result[1]. But a modern performance measurement joins the dictionary definitions of performance and the prevailing definition of economic performance. The economic definition of performance is future revenues discounted to presented value. But, having bridged the dictionary and economic definitions of performance, modern performance measurement has gone away because it remains firm-centric. Firm-centric measurement treats the firm as a single entity and attempts to measure both the financial and non-financial performance at the level of the firm.

Accounting measures of performance have been the traditional mainstay of quantitative approaches to organizational performance measurement. The recent publicity surrounding the marketing of economic value added (EVA) as an overall measure of company performance by management consultants

Stern Stewart can be seen as a sign of a new emphasis on the financial aspects of performance. The purpose of this contribution is to review the role and functions of financial measures of organizational performance, and to out-line the major features of their development, particularly in the latter half of the last century. It will be argued that there are three different major functions for financial performance measures, and that, although these functions overlap to some ‘extent, major confusion can be caused by applying measures developed for one function to a different one. The three main functions involved are:

1. Financial measures of performance as tools of financial management. Here the focus is on the functional specializing of finance and financial management. This is concerned with the efficient provision and use of financial resources to support the wider aims of the organization, and manage the effective and efficient operation of the finance function.
2 Financial performance as a major objective of a business organization. Here, an overarching financial performance measure, such as profit, return on investment, or EVA, is used to signify the achievement of an important organizational objective.
3 Financial measures of performance as mechanisms for motivation and control within the organization. Here the financial information provides a ‘window’ into the organization by which specific operations are managed through the codification of their inputs and outputs in financial terms.

Any organization, whether public or private, has to live within financial constraints and to deliver perceived value for money to its shareholders. The role of the finance function is to manage the financial resources of the organization, and to ensure that the financial constraints it faces are not breached failure to do this will lead to financial distress, and ultimately, for many organizations, to financial failure or bankruptcy. Thus, financial planning and control is an essential part of the overall management process. There are three main areas of focus for financial plans. Most basically, cash flow planning is required to ensure that the cash is available to meet the financial obligations of the organization. Failure to manage cash flows will result in technical insolvency. For business organizations, the second area requiring attention is profitability, or the need to acquire resources (usually from revenues acquired by selling goods and services) at a

2. Research Methodology :

India has vast resources of livestock, which play a vital role in the national economy and also in the socio-economic development of rural households. The dairy industry plays a vital role in the growth and development of country. The Indian dairy sector contributes a large share in the agriculture Gross Domestic Product (GDP). In India dairy co-operatives were formed only after 1912. The real beginning was made only after Second World War. The Khaira District Co-operatives Milk Union Ltd. popularly known as "AMUL" was the first producer oriented dairy organized in 1946. This milk union has proved that dairying can be best conducted if production, processing and marketing are owned and operated by the farmers themselves. The dairy co-operatives are organized in a three tire structure. This structure is proposed by the National Dairy Development Board and is known as " Anand Pattern ". Milk production has increased substantially with the efforts of the NDDB's operation flood programme. The performance of the Indian dairy sector over the past three decade has been extremely impressive. Milk production witnessed a significant growth of about 4.5 % per annum to reach the level of 78.1 million tonnes during 1999-2000, making India the largest producer of milk in the world.

2.1 Title of The Problem :

In the foot steps of Amul Sahakari Dairy in Gujarat, 12 District Milk Producer's Unions and 11,450 milk producing co-operative societies are functioning. To strengthen the rural economy of our nation District Milk Producer's Unions are playing vital role. In this research study, nine District Milk Producer's Unions of Gujarat have between selected. Researcher has attempted to study how efficiently "District Milk Producers' Unions" are using their resources for enhancing the profitability position. The present study has made a modest attempt in assessing the financial health of the selected co-operative dairy units by applying accounting tools and techniques to the data of nine district co-operative dairy unions in Gujarat state. The subject of this research is "**A Performance Appraisal of Dairy Industry in Gujarat**". The dairy co-operatives in India have been rendering invaluable service for the economic battlement and well being of the rural population. The dairy co-operative movement is bringing about socio economic changes in

the society without restoring to undesirable method and violence.

2.2 Sample Design :

This study is based on the secondary data derived from annual published reports of selected district co-operative dairy units. Various researchers have been conducted under commerce faculty of Saurashtra University. However, no researcher has been conducted on "A Performance Appraisal of Dairy Industry in Gujarat". This is the first attempt. Thus, this study would be an original contribution as the problem of the study is unique in every respect.

There are many dairies private as well as co-operative in Gujarat. In Gujarat state there are twelve district co-operative milk producer's union ltd. are working at present. They are associated with the Gujarat Milk Marketing Federation Ltd. . Out of these twelve units namely The Junagadh District Co-operative Milk Producers' union Ltd., Junagadh has been closed. Two units namely The Panchmahal District Co-operative Milk Producer's union ,Godhara and The Ahmedabad District Co-operative Milk Producer's union Ltd. have denied to provide required information for the present study. Hence, these three units have been excluded for the present study. However, this study is confined to co-operative sector only and out of twelve district co-operative milk union limited the researcher has selected nine dairies units. They are as follows:

Sr.No.	Name of Dairy Unit
1.	The Sabarkantha District Co-operative Milk Producers' Union Ltd., Himmatnager, Dist.: Sabarkantha **(SABAR DAIRY)**
2	The Mehsana District Co-operative Milk Producers' Union Ltd., Mehsana, Dist.: Mehsana **(DUDH-SAGAR DAIRY)**
3	The Banaskantha District Co-operative Milk Producers' Union Ltd., Palanpur, Dist.: Banaskantha **(BANAS DAIRY)**
4	The Surat District Co-operative Milk Producers' Union Ltd., Surat, Dist.: Surat **(SUMUL DAIRY)**
5	The Valsad District Co-operative Milk Producers' Union Ltd., Valsad, Dist.: Valsad **(VASUDHARA DAIRY)**

6	The Bharuch District Co-operative Milk Producers' Union Ltd., Bharuch, Dist.: Bharuch **(DUDH-DHARA DAIRY)**
7	The Rajkot District Co-operative Milk Producers' Union Ltd., Rajkot, Dist.: Rajkot **(GOPAL DAIRY)**
8	The Baroda District Co-operative Milk Producers' Union Ltd., Baroda, Dist.: Baroda **(BARODA DAIRY)**
9	The Khaira District Co-operative Milk Producers' Union Ltd., Anand, Dist.: Anand **(AMUL DAIRY)**

2.3 Data Collection :

The main source of data used for the study is secondary, drawn from the annual profit and loss account and balance sheet figures as found in the annual reports of the selected units. Personal visits and unstructured interviews with the officials of the dairies constitute the main source of the data. In addition to that, financial literature, journals, magazines, news papers and articles on the related aspect have also been used in this study. The collected information was classified and tabulated. With the help of statistical techniques like ratios, regression, common size statement, value added statement, the data were objectively analyzed and suitable conclusion were drawn. F-test have been applied to test the validity of hypothesis.

2.4 Period of the Study :

The study is made for a period of ten years from 1993-94 to 2003-04.

2.5 Scope of Study :

Dairy co-operative plays a crucial role in the economic development of rural population of the country. They are expected to perform efficiently both physically and financially. In Gujarat, the original pattern of three tire co-operative dairying was based on "bottom to top approach". Any inefficiency on it parts will weaken the co-operative dairying in the state and adversely affect the efforts towards the emancipation of living conditions of rural masses. However, the performance of dairy units is cause for worry as

they have failed to produce the desired result.

During this age of competition, private dairies are entering in to level playing field. The production of milk is being increased day by day but the demands do not increase in that proportion of milk and its products. In these circumstances, it is necessary to keep the dairy industry alive. The competition has already begun during the global era. To save the dairy industry, it is extremely necessary to make proper financial planning. The private dairies with limited staff, limited expenditure and modern technology are providing its products at low price and high quality to the customers. Under these circumstances, it is inevitable to have lower production cost, quality improvement, better marketing and control over expenditure to survive co-operative units operating under co-operative structure. The present study has been conducted to assess the functioning and financial appraisal of co-operative dairy industry of Gujarat state. Against this background, the present study assumes a special significance.

2.6 Objective of the Study :

The present study is an attempt to identity and evaluates financial performance indicators. The specific objectives of the study are as under:

1. To examine the profitability of the district co-operative milk producers' union ltd., as profit is considered to be an indispensable aspect of every business.
2. To study the trend of profit in co-operative dairy industry in the last ten years.
3. To suggest ways and means to improve profitability without an addition of financial resources.
4. To study the growth of dairy co-operative in India in general and Gujarat in particular.
5. To study dairy industry and government policy.

2.7 Reaearch Methodology For Interpretation Of Data :

The study is based on secondary data taken from the annual reports of the selected co-operative dairy units for the period from 1993-94 to 2002-03. Various publications have been used for the purpose. The unstructured personal interviews were undertaken by the researcher in order to ascertain the reliability of the secondary data and also understand internal and external factors affecting the profitability of the units.

The data obtained have been duly classified, edited and tabulated under various groups and sub-groups as per requirements of the study. Statistical measures like mean, regression, index number have been applied. "F" test have been applied to test the validity of hypothesis. These have been presented as per the chapter plan. The chapter plans are as under.

CHAPTER - 1

History and Growth of dairy industry

In this chapter the history and development, problems and prospect of dairy industry in India and Gujarat have been included. History and growth of selected district level milk unions under study also have been included. The government policy regarding the dairy industry is also explained.

CHAPTER - 2

Research Methodology and Conceptual Frame work

This chapter includes analysis of concept of financial statements, profit, profitability, measurement of profitability etc. It also covers the following aspects: title of the problem, data collection method, period of survey, scope of study, objective of the study, survey of existing literature, hypotheses and tools of analysis and limitations of the study.

CHAPTER - 3

Analysis of Common Size Statement

In this chapter the meaning of the common size statement, advantages and limitations of common size statements have been discussed. Condensed

and common size income statement of selected units have been prepared and analyzed. Inter firm comparison and findings have also been included.

CHAPTER - 4

Analysis of Value Added Statement

It covers the following aspects of value added, meanings, generation of value added, application of value added, advantages and limitations of value added statements, analysis and interpretation of value added statements of selected units under study.

CHAPTER - 5

Analysis of Profitability

In this chapter the meaning of profitability, measurement of profitability and frame work of various ratios have been discussed. The assets turnover ratios, profit margin ratios and return on investment ratios have been calculated and discussed. It also includes the discussion of the regression analysis chi-square test and "F" test.

CHAPTER - 6

Summary, Conclusions and Suggestions

Brief summary of the chapters included for the present study have been given in this chapter. Moreover, major findings are included. The suggestions for progress of co-operative dairy industry have been presented.

2.8 Hypotheses :

In this source of the study two hypotheses (i) Null hypothesis and (ii) Alternative hypothesis have been taken and they have been tested with the help of chi-square test and 'F' test.

(i) Hypothesis Based on Chi-Square Test

For purpose of establishing causal relationship, regression line of variable "Y" on variable "X" have been calculated in the selected dairy units because the relationship enables us in the prediction and control over the future course of action. The expected value of "Y" has also been computed on the basis of the

respective variables. Thereafter, the chi-square (X^2) test has been applied to find out whether the difference between the actual variables and computed variables, on the regression line in various selected dairy units are significant or not. The statement of null hypothesis is that the variables in different dairy units under study are not significant, while the statement of alternative hypothesis is that the difference between the actual value and computed value of respective variables in different dairy units under study are significant. The chi-square test is also known as the test of goodness or fitness or test of significance. If the table value of chi-square is greater than the computed value of chi-square(X^2) it shows that the difference between actual and computed value will be insignificant and the result will be as per our expectations and the test holds good and null hypothesis will be accepted while the alternative hypothesis will be rejected.

Table value of chi-square at 5% level (df=9) would be 16.919.

(ii) Hypothesis Based on "F" Test :

When it is believed that two independent factors might have an effect on the responsible variable, two way classification "F" test is designed to measure the effect of the two factors simultaneously. A null hypothesis is taken that the variance appeared is not significant while an alternative hypothesis is also taken that the variance appeared is significant. Thereafter, the calculated values of "F" are compared with the table values. If the calculated value of "F" is higher then the table value at pre-assigned level of 5% significance, the null hypothesis is rejected, otherwise accepted.

Moreover, it has been assumed that the difference arose in the proportion of respective variables over the years and among the various units did not differ significantly. The difference between two variables is accidental.

Between the years the table value of "F" at V1= 9 and V2= 72 is at is 2.10 at 5% level.

Between units the table value of "F" at V1= 8 and V2= 72 is 2.10 at 5% level.

2.9 Tools and Techniques :

For the present study following tools have been used for analysis of profitability of selected Dairy unit of the Gujarat state.

2.9.1 Accounting Tools :

1. Common Size Statement

Common size statement converts financial statement by expressing absolute rupee amount into percentage. Common size analysis can make a comparison between different size firms much more meaningful since the numbers are brought to a common base percentage. Common size statement is miniatures of the originals. They are valuable to an analyst in studying the current financial position and operating results of a especially in making comparison between companies in the same industry. This method of analysis may be used in making a historical study of a particular business because major changes in the distribution of individual items revealed.

2. Value Added Statement

The concept of value added is considerably old. Value added is the wealth a reporting entity has been able to create through the collective effort of capital, management and employees. Value added is the wealth that a firm creates by its own efforts. Value added statement is the indicator of corporate performance for shareholders and stakeholders who contribute s in the process of addition of value to product. The value added statements has several advantages. The value added statement is a good measure of the overall productivity of the firm and it is out of the value added that the firm rewards all interested parties. Value added based ratios are useful diagnostic and predictive tools. Value added statement is very good measure of the size and importance of a enterprise.

3. Ratio Analysis

To evaluate the financial condition and performance of an enterprise, the financial analyst needs certain yardsticks. On e of such yardsticks frequently used is a ratio, or index, relating two pieces of financial data to each other. Ratios, as a tool of financial management, can be expressed as (a) percentage, (b) fraction, and (c) a stated comparison between numbers. Ratio analysis can

make comparison between different size firms much more meaningful. The most important measure of profitability of company is ratio. Analysis of an enterprise by financial ratios enables the financial manager as well as interested external parties, to evaluate the firm's financial performance and condition rapidly by making comparisons of ratios obtained from the firm with ratios obtained from other comparable firm. Ratio analysis provides guides and clues especially in spotting trends towards better or poor performance, and in finding out significant deviation from any average or relatively applicable standard. Thus, ratio analysis enables the user to better understand financial statements than by looking at the absolute quantities alone.

2.9.2 Statistical techniques :

Use of statistical techniques has become a normal phenomenon in any type of analysis. The statistical techniques which are proposed to be used in financial statement analysis of co-operative dairy units are as under.

(1) Mean

(2) Index

(3) Regression

(4) F-test

(5) Chi-Square test

(6) Diagrammatic and Graphic Presentation of Data

Diagrams and graphs are visual aids which gives a bird's eye view of given set of numerical data. They present the data in simple readily comprehensible and intelligible form. Graphic presentation of statistical data gives a pictorial effect to what would otherwise be just a mass of figures. Diagrams and graphs depict more information than the data shown in the table. These clarify existing trend in the data and how the trend changes. Simple bar diagram and multiple bar diagrams are used in the study.

3. Review of Existing Literature on Dairying :

There are numerous studies made by scholar to evaluate dairy industry

from different angle. The literature available so far has covered the history and growth of Indian dairy industry, the evaluation of co-operative dairy, the modalities of working of Anand Pattern, dairy development under government plan and operation flood programme etc. The following are some of the important studies made on dairying.

R.W.Nightingale (1963) compares the cost of marketing of milk under traditional marketing system under capital-intensive marketing system of Operation Flood Programme. This analysis reveals that the cost of marketing of milk under the traditional marketing method is much less than the cost under the marketing systems Operation Flood Programme and suggests gradual modernization with small capital inputs.

R.K.Tondon and S.P.Dondyal (1971) computed fixed capital in dairy enterprise including the value of livestock, dairy equipments, building, paddocks and agricultural equipments and noted that their working capital was composed of established charges, feed cost, rent, irrigation charges, upkeep of building, repair charges of dead stock, depreciation charges on live stock and dairy appliance, building, furniture and agricultural implements.

P.Kumar and K.C.Rout (1974), in their study on economic response of feed on milk production for different types of feed of dairy cows in haryana, found that feed was a significant factor influencing milk yield. Feed cost accounted for 60 to 70 percent of the total cost of production.

D.S.Thakur (1975), studies the progress of selected milk co-operatives in Gujarat and analysed their impact on the economic conditions of the farmers in general and weaker sections in particular. The study covered four milk unions. Twenty four villages were selected randomly in the study area. Data were collected through a survey method and concluded that landless labour earned as much as 20 to 30 percent of their total income from dairying.

R.N.Pal, et al. (1975), studies the economics of milk production under specialised dairy farming in Haryana Agricultural University, Hissar. They observed that cost of milk production could be reduced with the increase in the milk yield. The returns from the specialised dairy farming were better in certain

years than those from mixed and arable farming. They concluded that dairy farming would be advantageous near cities where good market for milk is readily avaible.

D.L.Saradiwala and J.C. Kalla (1975), in their study on comparative economics of cows and buffaloes in milk production in West Rajasthan found that the total cost of feeds and fodder accounted for about 60 to 70 percent and cost of labour for about 17 percent of the total cost of production. They considered cost of feeds and fodder, cost of labour, interest on capital investment and total upkeep of bulls in gross cost of milk production. They concluded that Moora buffaloes were economically more suitable for milk production as compared to the Haryana and Rathi cows.

P.Singh and D.Jha (1975), in their study on economic optima in milk production in Etab district in Uttar Pradesh, considered both family and hired labour for bringing fodder from the field, feeding, milking and cleaning milch animal. Labour was apportioned to different animals. They included cotton seeds, and other grains under concentrates. They concluded that involvement of family labour was more than the hired labour and feed cost proportion was more in total cost.

V.K.Madalia and A.S.Charon (1976), in their study on the economics of maintenance of cows and buffaloes and their milk production in Surat district, Gujarat, considered cost of feed, labour, miscellaneous, recurring cost, depreciation on animals to arrive at gross cost of maintenance of cows and buffaloes. They found that the feeds accounting for more than three-fourth of the total cost formed the major item of the cost structure followed by labour cost. The cost of maintenance of various types of buffaloes was also more than that of various types of cows.

G.K.Hiremath, et al. (1977), in their case study on the profitability of dairying with cross-breed cows in Hubli area of Karnataka state, studied the capital investment, annual expenditure and income. They found that dairying especially with cross-breed cows was a profitable enterprise for the farmers, especially the weaker sections. The rate of return as well as the rate of turnover

indicated that the investment in cross-breed cows would be both remunerative and safe.

G.K.Hiremath, et al. (1978) also studied that the profitability of dairy enterprises with buffaloes in Hubli-Dharwad area of Karnataka State. They concluded that dairying with buffalo was quite profitable in the area. They found that the profitability increased with the size of the dairy unit. The expenditure on feed contributed largely to the total cost and the lower price of milk in the rural areas adversely affected the profitability of the milk production.

Bant Singh, et al. (1980) while studying the cost of milk production in Punjab, worked out annual maintenance cost of milch animals and per liter cost of production of milk, considered cost of green fodder, dry fodder, concentrates, labour, veterinary charges and miscellaneous charges as operational costs, and interest and depreciation cost on animals, cattle shed and equipments as fixed costs, Both together formed maintenance cost. They concluded that proportion of operational cost to the total was more in the study area.

R.N.Panday and T.S.Bhogali (1980) studied the farm income and employment from optimal crop and milk production plans delivered by using common and improved production technologies. They concluded that the milch animals contributed significantly to the total farm income and employment under the existing crop and milk production pattern. The large scale adoption of improved crop production technology on the typical mixed farms complements milk production activities.

S.P.Kalyankar (1980) studies the economics of milk production in different breeds of cows and buffaloes maintained by an organised dairy farm of Agricultural College, Akola, Maharashtra. Analysis on an overall basis showed that the feed was the most important item of cost (51.5%) followed by labour (24.73%). Net cost per liter of milk production worked out to Rs.2.66 on an over all basis.

S.S.Grewal and P.S.Rangi (1980) while the studying the economics of an employment in dairying Punjab, analysed the cost and return structure of milch animals for cultivators and non cultivators separately. They concluded that for cultivators, fodder, concentrates and hired labour accounted for 34.99,

42.61 and 4.93 percent of the total cost respectively. Whereas , for non-cultivators, fodder, concentrates and hired labour accounted for 38.25, 32.38 and 2.98 percent of the total cost respectively. On an average the labour input worked out at 1.7 hours per animal per day.

V.Kulaindaiswamy (1980) has made an attempt to appraise the working of DCSs in Erode Milk Shed Area (EMSA) of Tamil Nadu, in the light of the successful Anand Pattern in Gujarat State. This study concluded that all the basic ingredients on which the success of Anand pattern hinges were observed in the Erode Milk Shed Area also.

Thomas P.Benjamin (1983) has attempted to find out the optimum combination of variables required by the farmers to increase milk production and their relationship with the milk co-operative societies using factor analysis techniques. The researcher concluded that the health care facilities provided by the dairy societies, feed supply, and artificial insemination facilities, etc. , are important factors increasing milk production.

Surrender Singh's (1986) study evaluates some of the implications of OP-II programme on Indian dairy sector. It concludes that due to shortage of livestock feed and fodder concentration in developed areas of the country, negligence of backward regions like hilly, tribal, arid, semi-arid areas and heavy dependence on donated commodities, etc., the OP-II does not seem to be a safe device to improve Indian dairying.

C.Ratnam (1986) has made an attempt to analyse the demand and supply aspects of milk in the district of Vishakhapatnam in Andra Pradesh. The study highlights the fact that demand has always surpassed supply of milk in the districts. To bridge the gap between these two, the researcher suggests that the effective measures like improved breeding and feeding, higher procurement price of milk, etc., be taken.

C.P.Vithal (1986) studied the working of MPCSs in Ananthpur district of Andhra Pradesh with the help of field observation and formal discussions with a score of members of selected societies. He also collected secondary data from various other sources. He suggested that:

(i) Honesty and integrity should be taken into consideration while appointing the secretary.

(ii) The dairy should arrange proper transport facilities to boost milk procurement.

(iii) The dairy should ensure proper support price to milk producers by taking into account the cost of milk production.

Harold Alderman (1987) used multi-variate regression technique to analyse data from five rounds of household surveys collected in two of three ecological zone of Karnataka, covered by the KDDC project. The study concluded that milk production and procurement prices were higher in experiment villages with co-operatives than in control villages.

Rajvir Singh and Jitendra Singh (1988) while computing cost and return structure of commercial dairy herds in Karnal town (Haryan), considered different fixed costs such as cattle shed and stores, dairy equipments and adult animals. The variable costs included green fodder, dry fodder concentrates, labour, veterinary expenditure on animals, repairs and miscellaneous charges. They found that on average, milk yield per milch animal was about 5kg by using 38 kg green fodder, 9kg dry fodder, 4kg concentrates and Rs. 2 on labour per day.

R.C.Mascarenhas (1988) has evaluated the socio-economic impact of the World Bank aided dairy development project in Karnataka and the role of the National Dairy Development Board in dairy development. The study brings out that the dairy development created an impact on community management, social learning and strategic management. The use of modern technology, commercial approach to dairying, acceptance of animal husbandry practices increased in the rural area and rural development brought a charge in value and attitudes of rural people due to dairy development.

Jawan Ram (1988) made an attempt to analyse the organisation and working of Jaipur District Co-operative Union Limited, Jaipur and Rajasthan. The study was conducted through personal interviews with management and other employees of the union. He studies the organisational structure and functions.

Important functions such as (i) milk collection, (ii) supply of technical inputs, (iii) farmers' induction programmes, and (iv) supervision, were closely observed. On the basis of the analysis he noticed some drawbacks. At the end of the study the author had made some useful suggestions for improvement.

K.A.Jahilal, et al. (1988) examined the impact of dairy development undertaken under the aegis of the erstwhile KDDC on weaker sections. The study covered Bangalore North and Doddaballapur talukas and used sampling and questionnaire techniques. The study concluded that the KDCC has made an appreciable impact on weaker sections and that they were happy with its functioning. The study pointed out that more than 56 percent of the farmers in the area were earning 50 to 75 percent of the family income from dairy enterprises and that more than 64 percent of the farmers had repaid 75 to 100 percent of dairy loans taken, and also the milk producers in the area were selling only to DCSs.

N.K.Kale, et al. (1989) studied the financial position, working and operational efficiency of 23 DCSs in Raigad district of Maharashtar. They studied the economic efficiency through income-expenditure ratio, expenditure-income ratio, rate of return on capital and rate of turnover. They concluded that:

(i) The DCSs had low owned capital and were dependent on borrowings from financial institutions. (ii) Even though the working capital of the DCSs was low, their turnover was high because the DCSs did note make payment to milk producers from their own funds. Therefore, DCSs were able to carry on business with limited capital, and (iii) A large proportion of the income of DCSs was from trading profit.

U.K.Pandy (1995) made an attempt in his paper to assess temporal and spatial changes in livestock wealth and also to identity the major constraints inhibiting the growth of the animal husbandry sector. The study is based on secondary data, and compound growth rates technique were computed to indicate an increase or decrease in livestock population during the inter-census periods.

Mrs.Heena Rawal (1999) studied the profitability of Five district milk producers' co-operative union ltd. of Gujarat state. She studied costing and pricing

practice of milk co-operative of Gujarat state. They found that the profitability increase by reducing the cost or increasing the total sales. The co-operative has not adopted a proper costing system and cost-volume profit method to control cost. Cost centre has not been identified by any of the co-operative dairy.

V.M.Rao (2005) studied to evaluate impact of phase of iv of WDP in Bihar on women and draw lessons for future policy planning. They analysed various phase of WDP in term of its state objective and actual achievements and performance of women dairy co-operative functioning in the project area. They collected the history of selected women. They suggested suitable interventions with a view to improve the implementation of STEP programme.

4. **Limitations of the Study :**

The limitations of the present study are as under.

(1) The data for this research is based on mainly published annual reports, publications and magazines. The error and inconsistencies of such publications apply to this study.

(2) This study is limited to co-operative dairies working in Gujarat state. Its conditions can not be applied to the whole co-operative dairy industry at national level.

(3) In the present study ratio analysis, common size income statement, value added statement etc. have been used. These tools and techniques are not out of the verge of certain limitations of their own which also applies to present study.

(4) Some data have been collected through personal unstructured interviews of officers of selected units. So there are possibilities of errors in the opinions of such officers which apply to the present study.

(5) Dairy industry may be working in private and co-operative sectors but this study is based only on the functions of the dairy industry in co-operative sector. Hence, the findings of this study will not be applicable to private sector dairy unit.

greater rate than using them.

5. Financial Statement Concept :

One of the most important functions of accounting process is to accumulate and report historical accounting information. The most prominent example of such reports are the general purpose financial statement showing an organization's financial position and results of its operations. These financial statements are the end result of the process of financial accounting. In the words of **Hampton**, " A financial statement is an organized collection of data organized according to logical and consistent accounting procedures.[2]" Therefore, all the statements and accounting reports which the accountants prepare at the end of a period for a business enterprise may be taken as financial statements. But the principal financial statements are the 'Balance-Sheet' and 'Profit and Loss Account'. The Balance-Sheet states the assets, liabilities and capital of the business and profit and loss statement shows the result of operations achieved during a certain period. Accounting, which is the process of evolution, has three phases : (i) the recording of transactions in the books of original entry, (ii) the classification of these transactions in the ledger, and (iii) the summarization of the records. The construction of the financial statement is a part of the third phase of the accounting techniques. Thus, financial statements are summarized periodical reports of financial and operating data accumulated by an enterprise in its books of accounts. The accounting figures that are collected, tabulated and summarized by accounting methods are presented in financial statements. By, nature, therefore, the financial statements are the end products of financial accounting. Financial statements are periodical statements and the period for which they relate is known as accounting period, usually of one year's duration.

There are basically two financial statements one the **Balance Sheet** and the other, the **Profit and Loss Account** or **Income Statement.** In the words of **Myer**, " The term financial statements, as used in modern business, refer to the two statements which the accountant prepares at the end of a period of time for a business enterprise. They are the balance-sheet, or statement of financial position, and the income statement, or profit and loss statement.[3] Thus, the Principal financial statements are the balance-sheet. As McMullen has stated, "The

principal financial statements published for the information of outsiders are the balance-sheet, the income statement, the statement of retained earnings or owner's equity, and the statement of changes in financial position (formerly usually known as the statement of sources and application of funds."[4]

The balance-sheet is a statement of assets and liabilities of a firm or what it owns and what is owes, as on a given date. In a balance-sheet the assets and liabilities are equal to each other. In the words of **Pyle, white** and **larson**, "A balance-sheet is so called its two sides must always balance, the sum of the assets shown on the balance sheet must equal liabilities plus owner equity"[5]. According to **Block** and **Hirt,** "The balance sheet indicates what the firm owns, and how these assets are financed in the form of liabilities or ownership interest"[6]. It is a statement of affairs of an organisation at a point of time and may be defined as a statement prepared with a view to measuring the financial position of a business enterprise at a certain fixed date. It reveals the financial position of a business as reflected by the accounting records and contains a list of assets, liability and capital item as on a given date. A balance sheet is a 'status report' and as such it shows 'what we have' and from 'where' on the last date of the accounting year. In the words of Dennis, " The simplest way for a layman to understand this is to think of the balance sheet as a statement of the 'sources of funds' and a statement of the 'deployment of funds' "[7].

5.1 Usefulness of Financial Statements :

The financial statement give vital information concerning the position of a business and the results of its operations. The information provided by the financial statements is useful for decision making. It is the words of **Bierman Jr**. and **Drebin**, "financial statements are prepared primarily for decision making. The statements are not an end in themselves, but must be useful in a decision making context."[8] These statements are prepared for the purpose of presenting a periodical review or report on progress by the management and deal with the status of investment in the business and the results achieved during the period under review.[9] **Shuckett** and **Mock** observe that financial statements "May reveal shortcomings in control or indicate major areas for changes in corporate policy.[10] The published financial statements of a unit serve two purposes : for the public, they are a window on the management of unit inasmuch as they reveal many

facts about the financial development of units ; to the management, they are its eyes inasmuch as they reveal the strength and weaknesses and also trends in the finances of the unit in the light of which the management can take appropriate steps to set matters right. The financial statements are thus, of use to business executives, bankers, creditors, stockholders, bondholders, research workers, financial analysts, and Government authorities. The reliable information about economic resources is provided to various personnel which is important in evaluating the enterprise's strength and weaknesses. A general objective of financial accounting and financial statements is to provide reliable information about economic resources and obligations of a business enterprise. This information is important in evaluating the enterprise's strengths and weaknesses. It indicates how enterprise resources are financed and the pattern of its holdings of resources. It aids in evaluating the enterprise's ability to meet its commitments. This information indicates the present resource base available to exploit opportunities and make future progress."[11]

5.2 Profit :

Profit is a main goal for establishing a business concern. Profit is a primary motivating force for economic activities. Profits are the soul of the business without which it is lifeless. In fact, profits are useful intermediate beacon towards which a firm's capital should be directed.[12] The question of the determination of profit is of great importance. The true profit of a concern not only affects its proprietors but also the Income tax authorities, Manager's Directors, etc; who are to be paid a percentage of the net profit. Therefore, the question is: What is profit ? Law has not defined the word 'Profit'. Even the accountants are not unanimous on this matter. The word 'Profit' is variously defined. It is said, "generally speaking the profit of a business during a given period is the excess of income over expenditure for the period". The word 'Profit' has been defined in a number of ways. **Kohler** defined profits as 'A general term for the excess of revenue, proceeds or selling price over related costs".[13] According to **Davidson, Stickney** and **weil**," The terms net income, earnings and profits are synonymous used interchangeably in corporate annual reports "[14]. Profit is a very important aspect of business. " The principal motivating force behind conducting business is profit. Perhaps the most important reason for keeping accounts, as far as the management of a business is concerned, is that the infor-

mation contained in them provides the means of measuring the progress of the business of testing its pulse and indicating when and where remedial action if necessary, shall be taken."[15] The task of management is maximization of profits. The efficiency of a business is measured by the amount of profit earned. The greater the profit, the more efficient is the business considered to be. A company should earn profits to survive and grow over a long period of time. Profits are essential, but it would be wrong to assume that every action initiated by the management of a company should be aimed at maximization of profits, irrespective of social consequences. It is a fact that sufficient profits must be earned to sustain the operations of the business to be able to obtain funds from investors for expansion and to contribute towards the social overheads for the welfare of the society. Profit is measure of surplus wealth generated by a business concern from its operations. The measurement of profits in the continuing business concentrates place on periodic basis. The word 'Profit' implies a comparison of the operations of business between two specific dates, which are usually separated by an interval of one year. No company can survive of its effectiveness; and in a capitalist society, there is no future for a private enterprise which always incurs loss. Profit is a single for the allocation of resources and a yardstick for judging the managerial efficiency. " To the financial management, Profits are the test of efficiency and a measure of control, to the owners, a measure of the worth of their investment, to the creditors, the margin of safety, to the employees a source of fringe benefits, to the government a measure of taxable capacity and the basis of legislative action, to the country profit index of economic progress, national generated and rise in the standard living".[16] Profit can arise when the price paid by the customers for the product of the business firm exceeds the cost that has been incurred for it. Profit has been defined in a number of ways by accountants, economist and other as per its use and purpose. There have been many theoretical discussion of the concept of profit, but there is no consensus on the precise definition of this theoretical construct.[17] There are two main concept one is accounting concept and other is economic concept. Both the concept of profit represents as an excess of revenue over the total cost differs in these two concepts. As a result the accounting concept of profit differs from economic concept and the figure of accounting profit will differ from that of economic profit. However, the various concepts of profit have been shown below which will give clear

conception of profit.

5.2.1 Accounting Profit :

In accounting, the word 'profit' is used almost invariably with some qualifying words or phrases. In the report of a special committee of the American Institute of Accountants, the word 'profit' is modified in thirty different ways. According to this report the accountant usually means by the term 'profit' the excess of the selling price over the cost of anything.[18] In a very broad term, in the asset and liabilities view, earnings are determined as a measure of change (but not necessarily the entire change) in net economic resources of a business enterprise for a period. In revenue and expense view, earnings (i.e. profit) are equal to the difference between revenue and cost of earning that revenue as also ascertainment of this cost in bulk of the job of accounting. Here, "earnings are a direct measure of the effectiveness of an enterprise in using its inputs to obtain and sell outputs and are not necessarily based on or limited to change in net economic resources."

In this sense, accounting profit is known as the excess of total revenues over their total costs of during a given period. Thus, accounting profit lies in the difference between the current value of sales minus the historic cost of expenses plus the retained capital gains i.e. the difference between the proceeds from irregular disposal of assets minus historic cost minus depreciation of irregularly disposed assets.

5.2.2 Types of Accounting Profit :

Business is conducted primarily to earn profit. The terms 'profit', 'income' and 'earning' are similar and they are used interchangeably. Generally the income statement can be "multiple steps" income statement or "single step" income step. The profit under "multiple step" income statement is determined in various steps like gross profit, the operating profit or the operating profit before interest and taxes, the net profit, viz ; the net profit before tax and the net profit after tax and the profit available to shareholders.

5.2.3 Gross Profit :

Sales and other operating revenues are compared with the cost of goods

sold to give the gross profit. (If cost of goods sold exceeds the sales revenue and other operating revenues then there will be a gross loss).

5.2.4 Operating profit :

Operating profit includes all net income before taxes produced by operating assets and excludes any items of non-operating income, such as rental income from leased property, and non-operating expenses, such as interest payments. In other words, the operating assets produce a stream of income known as operating income.[19] In simple words, operating profit is the difference between gross profit and operating expenses (often divided into administration, selling and distribution expenses).

5.2.5 Net Profit :

To the operating profit other non-operating incomes are added and there from other non-operating expenses are deducted. The resultant figure is net profit before tax. Non-operating incomes arise from secondary activities, for example, interest, rent and dividend received by a company whose main business is not to deal in finance, property and investments. Other expenses arise from incidental activities ; for example, financing costs, such as the payment of interest. **Kohler**[20] defines Net profit as the profit remaining from revenue after deducting related costs. It is thus the residual income left after meeting all the contractual and non-contractual expenses, such as manufacturing, administration, selling and financial expenses including depreciation provision and interest. If the provision for tax is deducted from the net profit before tax, the result is net profit after tax.

♦ **Profit available to Equity shareholders :**

If preference dividend is deducted from the net profit after tax, the rest income will be available to equity share holders.

"The excess of revenue over related costs applicable to a transaction, a group of transaction of an operating profit is profit ".[21] In accounting profit is generally known as the excess of total revenue over total costs associated with these revenues for the period. As such the residue of income after meeting all the "explicit", items of expenditure is termed as profit ".[22] Explicit items of expenditure generally , includes, raw material consumed, direct expenses, salaries & wages, administrative expenses, selling and distribution expenses, depreciation

and interest on capital of business firm. "The difference between the sales price and the costs of producing and selling that product is its profit".

5.3 Economic Profit :

Back in 1939 the famous economist **J.R.Hicks** defined a man's income as "the maximum value which he can consume during a weak, and still expect to be as well of at the end of the weak as he was at the beginning." Economic profit is the residual of income meeting all the 'explicit' and 'implicit' items of expenditure for a given period. The term explicit item of expenditure has the same meaning that have discussed in "accounting profit", but the implicit items of expenditure includes the amount of those factors of production which are owned by owner for example the rent of own land and building, the interest of own capital and salary of owner are termed as "Implicit cost", or "opportunity costs". However, the term economic profit in the form of equation can be represented as under :

Economic profit = Accounting profit – Implicit costs.

In economics the accounting profit is known as gross profit while the profit remaining after subtracting the implicit cost of owner's time and capital invested is known as "pure profit". To determine economic profit a competitive or normal rate of payment for services of capital supplied by the firm must be subtracted from the profit for the period as determined by conventional accounting methods. The capital supplied by the firm is the market value of land, plant, equipment, the working capital net of amounts borrowed against the physical assets.[23] In this sense, 'economic profit' is the residue of income after all the contractual and not contractual payments have been made from the revenue realized during a given period of item.

5.4 Social Profit :

The business units are using natural resources of the society. So they should be accountable towards the society which provided the resources. Therefore, social responsibility of the enterprise has been stressed. An increasing awareness of the social responsibilities on the part of a business unit has lead to the discussion of "Social profit", **Eichrorn** and **Clerk Abt. Associates of U.S.** has suggested "Social statement Approach for social accounting in which the term 'social profit

or social surpluses has been defined. Under this approach, the excess of social benefits over social cost is termed as 'Social profit' or 'Social surplus'. The social benefits made available to the society by the business unit include the employment generation, payments for goods and other services, taxes paid, contributions, dividends and interest paid, additional direct employee benefits like creating good townships, offering good condition of work environmental improvements. Any cost, sacrifice which proves a detriment to society, whether economic or non-economic, internal or external is termed as social costs. Social costs include goods and materials acquired, building and equipment purchased, labor and services used, work related to injuries and illness, public services and facilities used, environment damages like terrain damage, air pollution, water pollution, noise pollution, solid waste, visual and aesthetic pollution. However, there is no clear concept for measuring social benefits and social costs.

6. Accounting Profit and Economic Profit :

The concept of accounting profit and economic profit differ from each other from the view point of opportunity cost of capital invested and cost of owner's time. For the calculation of economic profit, opportunity cost of capital and owner's time is considered while calculating accounting profit it is ignored by accountants. In accounting the "profit is deemed to be the joint result of various factors of production while in economic, it is termed as the rent liability, the wages of owner and the reward of risk bearing.

The difference between accounting profit and economic profit can also be presented diagrammatically as follows :

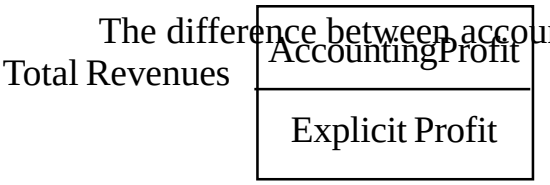


Fig.:1 Accounting Profit

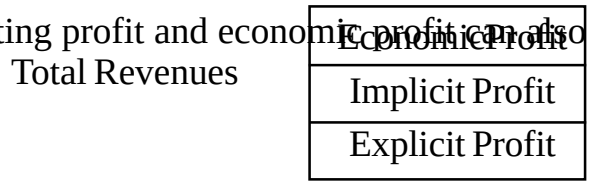


Fig.:2 Economic Profit

Thus the basic difference between accounting profit and economic profit is due to implicit costs.

7. Accounting Profit and Social Profit :

Accounting profit lies in the difference between the current values of sales minus the historic cost of expenses plus the retained capital gains. However, social profit lies in the difference between social benefits and social costs. Thus, it is clear from the above discussion that accounting profit includes all the activities of a business concern while social profit includes only social activities of a business concern.

8. Concept of Profitability :

The word 'profitability' is composed of two words 'profit' and 'ability'. Therefore, profitability means the profit making ability of the enterprise. According to Gibson and Boyer "Profitability is the ability of the firm to generate earnings".[24] In the words of Howard and Upton "The concept of profitability may be defined as the ability of a given investment to earn a return from its use"[25]. **Slavin, Reynolds** and M**alchaman** treat profit ability as a relationship of the earning to the total resources of a corporation"[26]. Profitability is an indication of the efficiency with which the operations of the enterprise are carried on. Poor operational performance may indicate poor sales and hence poor profits. A lower profitability may arise due to the lack of control over expenses. In accountancy, profitability may be described as a yard-stick of the enterprise performance and indicate public acceptance of the products. It is a relative concept which regulates and controls management policy and decision. In the words of Weston and Brigham, "Profitability is the net result of a large number of policies and decisions".[27] The profitability ratios shows the combined effects of liquidity, asset management and debt management on operating results.

8.1 Profit And Profitability :

Profit is essentially an internal measure of new wealth creation. It reflects the excess of earnings over expenses or costs. If the costs are more than earnings, it will mean a loss. Profit is the excess of net sale revenue over the cost of goods sold while profitability is the profit making ability of the business firm showing either steady or increased or decreased state of such ability during a specified time. Profit is an absolute connotation showing absolute figure which alone can not give an exact idea of changes in efficiency of business

firm whereas profitability is a relative concept which gives a clear idea of variation in efficiency. Thus, profit and profitability are two different concept, however, they are closely related and mutually interdependent, having distinct role in business. We may find having same amount of sales in two different business firms the profitability may not be equal or unequal profit-margins. That is why **R.S.Kulshresth** has rightly stated that "profit in two separate business concern may be identical, yet, many a time it usually happens that their profitability varies when measured in terms of size of investment"[28]. Hence, it can be said that profitability is broader concept comparing to the concept of profit. Profitability is the overall measure of efficiency. The income (output) as compared to the capital employed (input) indicates profitability of a firm.

8.2 Productivity And Profitability :

The performance of business firm can be evaluated or measured from a various ways, and there are various quantitative as well as qualitative criteria that can be employed for this purpose. Productivity and profitability is the two separate devices for the measurement of overall efficiency of a business firm.

$$\text{Productivity} = \frac{\text{Output}}{\text{Input}}$$

Productivity is defined as the ratio of outputs to inputs, outputs in the form of products or services and inputs are the resources which are put in to convert into outputs"[29]. It is the quality or state of being productive. It is a concept that guides the management of production system and measures its success. It is the quality that indicates how efficiency the material, the labor, the capital and the energy can be utilized. Measurement and analysis of productivity can help to identify area for corrective actions towards planning of business firm.

Capital and labor happen to be the two most important factors of production and the profitability of the business firms depends greatly on how efficiency and effectively it utilizes these two factors of production. The productivity of capital can be measured by the ratio of out-put to capital employed. The higher the ratio the greater would be the productivity of capital. If productivity of business firm

increases, the profitability will also increases. Thus profitability of the business firm largely depends on the productivity. Though both are different concepts of measuring the performance of business, their calculation is same base on the ratio. The calculation formula is under :

$$\text{Profitability} = \frac{\text{Operating Income}}{\text{Operating Assets}}$$

Where Operating Income means income from utilization of capital employed in the business firm and operating Assets means capital employed. **Chen** and **Mc Garrach** pointed out that, 'With due allowance for temporary currency value fluctuations or changes in commodity or product price, there is strong positive co-relation among time series data measuring productivity, profitability and efficiency[30]. "Profit may be high or law due to change in selling price of commodities and services, inflationary effects, Governmental policy etc. This does not mean that productivity has also been affected. In the word of **Dr.Shrivastava** , "Between cost and profitability there are actually so many other factors besides productivity. The stresses of development and the market mechanism may be playing their due role in inflating the profitability of a producing unit, while rationalization of efforts in every direction is the true basis of productivity[31]." Increase in productivity leads to greater profitability with an increase in large production. However, this will be true only when productivity increases in large production as compare to overall increase in the cost of production i.e. increase in money wages, material and other manufacturing expenses. If the productivity increases to the event of cost increases only, profitability remains changed. On the other hand, any decrease in productivity generally tends to reduce the profitability of an enterprise. At last, the term productivity means the rate of production measured in terms of labor, material or machines. The term profitability means the rate of profit earned, measured in terms of capital employed.

8.3 Profitability And Efficiency :

Profitability reflects the final result of business operations. Profitability is also not synonymous with 'Efficiency', though it is an index of efficiency; it is regarded as a measure of efficiency and management guide to greater efficiency. No doubt, profitability is an important yardstick of efficiency, but the extent of profitability can not be taken as a final proof of efficiency. Some time satisfactory profits can mask inefficiency and conversely, a proper degree of efficiency can be accompanied by an absence of profit. The net profit figure simply reveals a satisfactory balance between the values receive and value given. The change in operational efficiency is merely one of many factors on which profitability of an enterprise largely depends between cost and profitability. Moreover, there are many other factors besides efficiency which affects the profitability.

9. Factors Affecting The Profitability :

The following are the two main factors which affects the profitability of a business firm.

(1) The Operational Profit Margin

(2) The Rapidity of Turnover of capital employed.

Profitability is the product of these two factors and, therefore maximum or optimum profits can be earned only by maximizing them. In technical terms, the combination of these two factors is known as the 'Triangular Relationship'. Its significance exits not only in its use as an analytical tool but also because the profitability ratio can be calculated directly from the specific earnings and investment data. It is also useful in explaining the two forces bearing upon ultimate results and therefore, establishes the area of business operations which must be properly controlled if expected results are to be achieved. The Triangular Relationship has been shown in the following figure.[32]

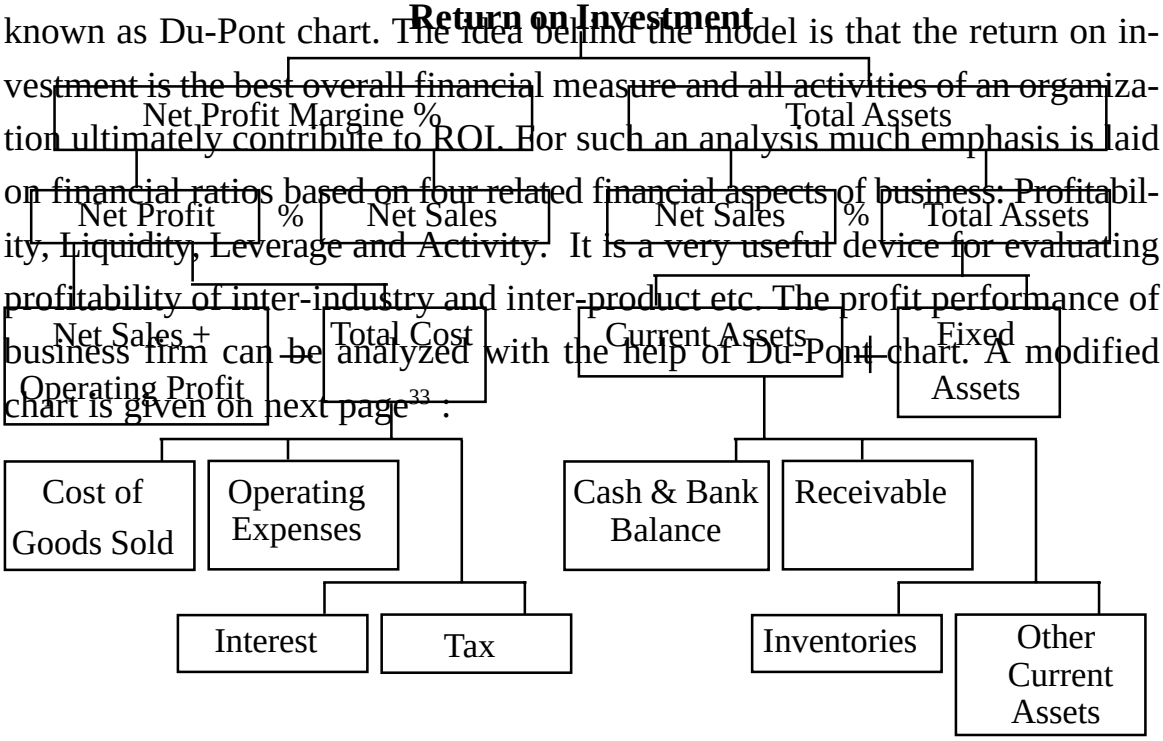
It can be shown in an equation form as under :

Where "Operating Assets" are used for 'capital employed' and income from utilization of capital employed in the business firm, respectively.

The inter-relationship between the above ratios has to be understood with a view to analyzing profitability. The rate of return on investment is the result of the profit margin and turnover of assets in sales. These two components are multiplied for arriving at the profit percentage on investment. Each of these two components is itself an end-product of a sequence of interrelated factors. These components are helpful in investigating the financial composition, analyzing current: financial position and formulating the financial forecasting for future of a business firm. Moreover, the interrelationship can also, be well understood with the help of Du-Pont chart.

10. **The Du-pont Chart :**

The du pont chart is a useful tool of financial analysis. It is a useful diagnostic tool for analysis. The inter-related components showed a profit path. The mechanics of profit path is based on the chart which is developed by **E.D.Du-Pont De Nemours** & **Company, Welmington**, USA This chart is popularly known as Du-Pont chart. The idea behind the model is that the return on investment is the best overall financial measure and all activities of an organization ultimately contribute to ROI. For such an analysis much emphasis is laid on financial ratios based on four related financial aspects of business: Profitability, Liquidity, Leverage and Activity. It is a very useful device for evaluating profitability of inter-industry and inter-product etc. The profit performance of business firm can be analyzed with the help of Du-Pont chart. A modified chart is given on next page[33] :



It is clear from the Du-Pont chart that the rate of return on investment is affected by a number of factors. It may be noted that the analytical chain in this chart is developed along with tiers. The first sequence starts with the net profit margin, shown in percentage, which is calculated by dividing net profit by net sales; net profit is equal to net sales plus non operating surplus less total cost and the total cost include cost of goods sold, operating expenses, interest and tax. In the second tier the sequence stats with total assets turnover, determined by dividing net sales by total assets. Total assets, of course, represents current plus net fixed assets. Current assets includes cash and bank balance, receivables, inventories and other current assets.

"The two tier approach concentrates attention on the separate forms contributing to profit. Improvement can be accomplished either through more effective use of available capital measured by the turnover sequence or through a better relationship between sales and expense measured by the profit margin sequence. For providing standard of evaluations, calculations are made on the ratio of return investments assets turnover and profit margin for compatible companies."[34]

Lastly, the financial decisions and policy matter decisions to the various factors shown in Du-Pont chart are also affects the profitability. "Financial decisions affect both, the size of earnings stream or profitability and risk ness of the firm. Policy decisions affect, risk and profitability." [35]

11. **Importance Of Profitability :**

Profit are the soul of the business without which is lifeless. For that profitability is a good device which represents the earning of a business firm.

Modern management is engaged in the task of maximizing the profits and wealth. The efficiency of management is measured by the profitability of the business; the greater is the profitability of the business, the more will be the efficiency. “An analysis of the profitability reveals as to how the position of profit stands as a result of total transactions made during the year. It need not be stressed that profitability is analyzed through the computation of profit ratios.[36]” Profitability of a business firm is very much helpful to the management, creditors and share-holders of business firm. The management of a business firm has to take some crucial managerial decision like further expansion, raising of additional finance and problem of bonus and dividend payments etc. and for this purpose the management greatly rely-upon the profitability of the business firm. Moreover, management can evaluate the operational efficiency of the business firm. The creditors of a business firm are also interested in the profitability of business firm. On the basis of profitability they decide their policy regarding the business firm. The share holders are equally interested in the profitability of the company. The share holders of a business firm cannot be judge by absolute size of its periodic profit. For that profitability is a good device which represent the earning capacity of a business firm. Modern management is engaged in the task of maximizing the profits and wealth. Profitability of a business firm is very much helpful to the management, creditors and share-holders of business firm. The management of a business firm has to take some crucial managerial decision like further expansion, raising of additional finance and problem of bonus and dividend payments etc. and for this purpose the management greatly rely-upon the profitability of the business firm. Moreover, management can evaluate the operational efficiency of the business firm. The creditors of a business firm are also interested in the profitability of business firm. On the basis of profitability they decide their policy regarding the business firm. The share holders are equally interested in the profitability of the company. The share holders can take the decision weather to hold their equity share in the company or not, on the basis of profitability. Thus the management, creditors and owners of the company are equally interested in the profitability of the company.

12. Techniques to Measure Profitability through Financial Statements :

Figures are dumb. However, they may tell a vivid story of the financial adventure of an enterprise, if analyzed. Financial analysis is a process of getting an insight into the operating activities of a business enterprise. It is a process of selection, relation and evaluation. The first step is to select from the total information available about a business the data relevant to the decision under consideration. The second is to arrange the relevant data in a way that will bring out significant relationships. The final step is to study these relationships and evaluate or interpret the result.

Trading and Profit and Loss account, Balance Sheet and other statement prepared at the end of the year do not always convey to the reader and real significance of operating results and financial health of the business. Such financial statements at the most present various facts, whether they include a good, bad or indifferent managerial performance or whether they point to probability of future success or failure is for the reader to conclude. And rarely can satisfactory diagnosis be reached on the basis of such information alone. In order to make such statements more meaningful, the user resorts to the techniques of analysis[4]. Financial analysis is a process of evaluating relationship between various components to obtain better understanding of a firm's position and performance. It is the process of identifying the financial strength and weaknesses of the firm by properly establishing relationship between the items in the Balance Sheet and Profit and Loss account. The objective of the study is to evaluate the financial performance of dairy industry in Gujarat to obtain a better understanding of its position and performance. For analyzing the financial data and interpreting them in systematic manner, tools such as comparative financial and operating statements, Common size statements, ratios and fund flow statements are commonly used.

12.1 Ratio Analysis :

A ratio is an arithmetical relationship between two figures. Study of ratio between various items of groups of items in financial statements is known as financial ratio analysis. It is the principal tool for analysis of financial statements. It is a tool for analysing the financial conditions, efficiency and profitability of a business firm. To evaluate the financial condition and performance of an enterprise, the financial analyst needs certain yardsticks. One of

such Yardsticks frequently used is a ratio, or index, relation two pieces of financial data to each other. Ratio, as a tool of financial management, can be expressed as (a) Percentage,(b) Fraction, and (c) a stated comparison between numbers. In the words of Livingstone and Kerrigan ," A ratio is the relation of one amount x, to other amount y, expressed as the ratio of x to y, or x : y, or as a fraction, or number, or a percentage."[37]

As observed by **Hunt, Williams and Donaldson**, "Ratios are simply a means of highlighting in arithmetical teams the relationships between figures drawn from financial statements."[38] According to Batty," The term 'accounting ratios' is used to describe significant relationship which exist between figures shown on a balance sheet, in a profit and loss account, in a budgetary control system, or in any other part of the accounting organization".[39] "Ratio Analysis "is one of the prevalent and the most popular technique to measure to profitability of a business firm. A ratio may be defined as "the indicated quotient of two mathematical expressions "and as "the relationship between two or more things."[40]. Ratio Analysis is a powerful tool for unraveling the underlying reasons for the financial structure, conditions and trends of business. Such an analysis helps in spotting reasons behind better or poor performance and finding out significant derivations from any average or relatively applicable standards.

12.1.1 Significance of Ratio Analysis :

The significance of the ration analysis depends on the purpose of which it is made by the analyst. The important points of significance are as under:

Financial ratios are to analysis. Ratio analysis is extremely helpful in providing valuable insight into a company's financial picture. Ratios normally pinpoint a business' strengths and weakness in two ways:

- Ratios provide an easy way to compare present performance with past.
- Ratios depict the areas in which a particular business is competitively advantaged or disadvantaged through comparing ratios to those of other businesses of the same size within the same industry.
- Firm's relative strength and weakness may be gauged through the comparison of past and future ratios. In case the ratios indicate weakness, corrective actions should be taken for improvement.

- The firm's ratios may compare with average industry ratios given an indication of the firm's position in the concerned industry. It is useful tool in the hands of management.

12.1.2 Limitations of Ratio Analysis :

Ratio analysis has a number of draw backs which are as under.

Difficulty in comparison due to –different procedures and practice followed by different firms, different accounting periods, every firm differs in age, size etc.

12.1.3 Kinds of ratios :

Financial ratio may be classified a number of ways. One classification scheme uses four major categories.

1. Liquidity Ratios
2. Turnover ratios
3. Leverage Ratios
4. Profitability Ratios

1. Liquidity Ratios:

These examine the adequacy of funds, the solvency of the firm, the firm's ability to pay its obligations when due. A firm's ability to pay its debts can be measured partly through the use of liquidity ratios. Short-term liquidity involves the relationship between current assets and current liabilities. If a firm has sufficient net working capital it will be deemed to have sufficient liquidity. Two ratios are commonly used to directly measure liquidity, the current ratio and the quick ratio or acid test ratio.

2. Turnover Ratios :

These ratios also referred to as activity ratios or asset management ratios, measure how efficiently the assets are employed by the firm. These ratios are based on the relationship between the level of activity, represented by sales or cost of goods sold, and levels of various assets. The important turnover ratios are inventory turnover, debtors ratio, creditors ratio, total assets turnover ratio, fixed assets turnover ratio and working capital turnover ratio. The operational

efficiency of an enterprise, or its earnings performance, should also be evaluated by inter-company or inter-period comparison of 'Asset Turnover'.

3. Leverage Ratios:

Financial leverage refers to the use of debt finance. While debt capital is a cheaper source of finance, it is also riskier source of finance. Leverage ratios help in assessing the risk arising from the use of debt capital. Two types of ratios are commonly used to analyse financial leverage, structured ratios and coverage ratios. Structured ratios are based on the proportions of debt and equity in the financial structure of the firm. The important structural ratios are debt-equity ratio and debt-assets ratio. Coverage ratios show the relationship between debt servicing commitments and the sources for meeting these burdens. The important coverage ratios are interest coverage ratio and cash flow coverage ratio.

4. Profitability Ratios :

Profitability reflects the final result of business operations. These are two types of profitability ratios, which are profit margin ratios and rate of return ratios. Profit margin ratios show the relationship between profit and sales. Two popular profit margin ratios are gross profit margin ratio and net profit margin ratio. The rate of return ratios reflects the relationship between profit and investment. The important rate of return ratios measure are net income to total assets, net income to net worth and net income to equity funds.

12.2 Comparative And Common Size Income Statement Analysis :

Profitability analysis is very useful on comparative basis, so, it is of paramount importance that a series of statements over a period of years should be used. Comparative and common size income statement is the simplest technique of profitability analysis. In this technique, the figure of net sales is taken equal to one hundred and the percentages of individual items are computed likewise. The statements so prepared provide a common basis for comparison as such the statement is termed as the common-size-statement. The tend revealed by common-size is more authentic as it shows "Qualitative Assessment" as opposed to "Quantitative Assessment" shown by absolute figures.

This statement shows two important problems, which are as under :

(I) It follows the concern of widely differing size to be directly compared.

(II) It allows an accurate comparison of financial activities of a company which have greatly changed in size over a few years.

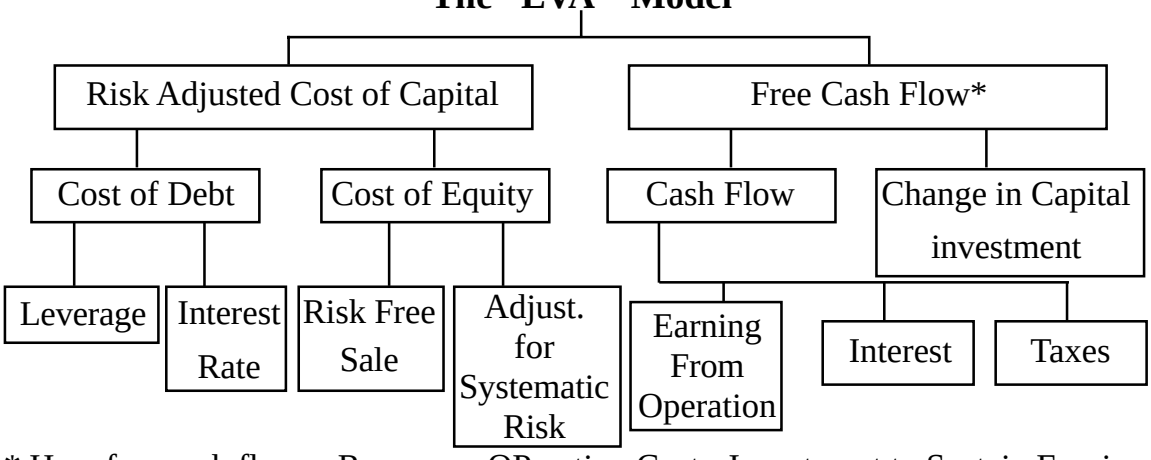
12.3 Value Added Analysis :

In this method two statements are prepared to show the generation of valued added and the application of value added. Value generated is computed by subtracting the total of the cost of bought in materials and services from the amount of sales plus income from services which is termed as Gross Value Added. From Gross Value Added if depreciation is deducted resultant figure is termed as Net Value Added. The net value added amount is distributed among four parties like (i) Employees (ii) Government (iii) Providers of Capital out-siders and share-holders and (iv) business firm itself. The value added statement also reveals the percentage of decrease in net value added and retained earning over years and helps to comment on the profitability.

12.4 Economic Value Added :

Economic Value Added: EVA is a hot new accounting tool. The technique of economic value added (EVA) has acquired acceptance as a tool for assessing the existing financial status and predicting the future performance of a company popularized by the New York (US)Based advisory firm **Stewart and Co.** it encompasses all aspects of a company's financial management, from capital budgeting, acquisition pricing to strategic planning and shareholder's communications, apart from identifying the value addition to shareholders by the organization during a specific period. The mechanism of EVA is very simple. It seeks to enjoy manager's memories by deducting from a firm's net operating profit a

The EVA Model



* Here free cash flow = Revenue - OPerating Cost - Investment to Sustain Earning

changes for the firm is adding value for its share holders. If the EVA is negative the firm is destroying shareholders wealth even though it may be reporting a positive and growing EPS or ROE".

The EVA model indicates that EVA is the net result of express of risk adjusted cost if the capital employed to generate cash flows. It has been observed that many factor like the estimation of stock market data that for analyzing the adjustment for systematic risk represented in calculating EVA do not from a part of standard accounting procedures. Since the finance managers are not used to representing the financial performance of an organization in such a way, then found difficulties in comparing EVA using not traditional parameters

12.5 Other Techniques of Measurements :

Various statistical techniques are used to provide a more accurate and scientific measurement form profitability analysis. These techniques are moving average, range, standard deviation, index numbers, regression, correlation, chi-square test, 'F' test and analysis of time series. Diagrams and graphs are also often used in profitability analysis. Graphs provides a simplified way of presenting the data and often gives a clear and through understanding of trends and relationship. Pie-graphs, Bar-graphs and other simple graphs are also used in profitability analysis.

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CHAPTER - III

COMMON SIZE INCOME STATEMENT

1. Introduction
    - 1.1 Definitions
    - 1.2 Advantages
    - 1.3 Limitations
2. Frame-Work of Analysis
3. Analysis of Common Size Statement of the Units Under Study
4. Inter firm Comparison and Findings of Common Size Statement

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CHAPTER - III

COMMON SIZE INCOME STATEMENT

1. Introduction :

Profitability is an indication of the efficiency with which the operations of the enterprise are carried on. Quantification of profitability or measurement of profitability is needed for taking policy decision under difference circumstances. The profitability can be measured in terms of different components of income statement or balance sheet. The other tools of measurement can not explain the changes that have taken place from year to year in relation to total assets, total liabilities or total net sales. Common size analysis can make a comparison between different size firms much more meaningful since the numbers are brought to a common base percentage. Common size statement converts financial statement by expressing absolute rupee amount into percentage.

1.1 Definitions :

In the words of **Ray H. Garrison** ,"A common size statement is one that shows the separate items appearing on it in percentage form , rather than in dollar form. Each item is stated as percentage of sum total of which that item is a part percentage of common size statement is known as vertical analysis"[1].

R.D.Kennedy and S.Y.McMullen say that "Common size statement supplemented by additional analytical financial data is the effective tools of a historical financial study of a business or industry"[2].

S.N.Maheshwari defines that "Common size statement are often called component percentage, or 100 percentage statement because each statement is reduced to the total of 100"[3].

"Common size financial statements are those in which figures reported are converted into percentages to some common base"[4].

Thus common size statement is miniatures of the originals. They are valuable to an analyst in studying the current financial position and operating results of a business and especially in making comparison between companies

in the same industry. This method of analysis may be used in making a historical study of a particular business because major changes in the distribution of individual items revealed.

1.2 Advantages :

1. Common size financial statement – income statement is a very useful tool for analyzing the financial position, particularly profitability.
2. Common size statement is useful in comparing two or more periods or two or more companies when the production capacity is not the same.
3. Components of cost of goods sold a company can be analyzed with the help of common size statement. It enables comparison of income of different periods of a company and within the company. It enables comparison between total cost and total sales of a company in different periods and within the companies in cost in the case of two or more than two companies.
4. The technique of analysis is useful when some one wish to compare one or more companies having differences in the organization's size. But to make such comparison really meaningful, it is necessary that the financial statements i.e. Income statement of all such companies should be prepared on the same pattern.
5. The profit and loss account which shows the operating expenses and operating incomes and the net difference between them, i.e. the profit or loss, revealing the operating performance of the organization. The operating expenses are incurred to keep the operational processes running and to maintain assets. The operating incomes are the revenues which derived from day to day transactions. Profit and loss account when read with absolute figures is not easily understandable, sometimes it is even misleading. It is, therefore, necessary that figures reported in this statement should be converted into percentage to some common base.[5]

1.3 Limitations :

There are certain limitations of Common Size Income Statement, which are as follows:

1. It shows the percentage of each item to the total period but not variations in

respective terms from period to period.

2. In calculating percentages, if the figure is negative, the percentages can not be calculated and likewise, if the change is from or a zero balance in account, it is not possible to calculate the percentage, Presenting the difficulties in common size analysis, **John N. Myer** has rightly noted, "It is doubtful whether the observation of trend of these relationship is of any value to the analyst because the total is affected by variations in all its components and therefore, the trends of the relationship are too complex for interpretation.
3. It provides information about the trend of individual item's relationship to total but observations of these trends are not very useful because they are not definite norms for proportion of each item to total.

2. Frame-work of analysis :

For Preparation of the common size income statement of dairy units under study, the following procedure has been adopted.

1. The figures of various items in the profit and loss account have been regrouped under various heads viz. Cost of procurement, processing expenses, marketing expenses, administrative expenses, personnel expenses and financial expenses etc. The total of each item has been rounded off to lakes of rupees up to decimal point for sake of convenience and simplicity.
2. The cost of sales comprises six components (as already classified), Procurement, Processing, Administrative, Marketing, Personnel and financial expenses.
3. The sale revenues in the dairy consist of sale of milk, sale of milk by-products such as ghee, flavored milk, butter, butter milk, sour and curdled milk, lassie and ice-cream etc.
4. The procurement and distribution of milk is the primary objective of the dairy. Hence, the milk is treated as the only major product of it ignoring the other by products such as ghee, butter milk; the contribution of which to the total revenue is quite negligible.
5. The procurement cost of the milk sold comprises of the purchase price of milk and other expenses such as transport, commission etc. The cost of milk sold includes the value of opening stock of milk and milk products,

purchase of milk and stocks received from other units less the value of closing stock of milk and milk products.

6. The processing expenses consist of excise, rent, rates and taxes, insurance, repair and maintaince, depreciation, research & extension, processing, power & fuel and general expenses, etc.
7. The marketing expenses consist of freight & forwarding, packaging expenses.
8. The administrative expenses consist of registration & license, post & telegram and audit expenses.
9. The personnel expense consist of staff Pf & gratuity and salaries & wages. The financial expense includes interest & bank commission.
10. The analysis revealing the proportion of each component to the total sales in each year made through the common size statement.
11. Each expense item or group of expenses item as a percentage of net sales and net sales are taken as hundred and the percentage of each group of item has been calculated.
12. In this statement sales figure is assumed to be equal to 100 and all other figures are expressed as percentage of sales.
13. The common size income statement for each individual dairy unit has been prepared separately for the period from 1993-94 to 2002-2003.

3. Analysis of Common Size Statement of the Units Under Study :

Table 3.1
Abridged & Common Size Income Statement of SABARKANTHA District Co-Operative Milk Producers's Union Ltd.
From 1993-94 to 2002-03

(Rupees In Lacs)

Particulars	1993-94		1994-95		1995-96		1996-97		1997-98		1998-99		1999-00		2000-01		2001-02		2002-03	
	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%
Sales	14097.64	100.00	17469.80	100.00	21271.82	100.00	25893.72	100.00	29158.35	100.00	32735.50	100.00	37941.05	100.00	37134.01	100.00	34692.96	100.00	43309.41	100.00
Opening stock	2027.57		2493.50		1186.88		821.49		1960.58		1537.26		1441.81		1347.57		1082.61		3467.6	
Add:-Purchases	10103.07		11395.43		16358.67		21101.42		22895.99		26185.17		30173.41		29286.74		30093.34		34442.2	
Less:-Closing stock	2493.50		1186.88		821.49		1960.58		1537.26		1441.81		1347.57		1082.61		3467.6		2303.25	
Procurement Cost	**9637.14**	**68.36**	**12702.05**	**72.71**	**16724.06**	**78.62**	**19962.33**	**77.09**	**23319.31**	**79.97**	**26280.62**	**80.28**	**30267.65**	**79.78**	**29551.70**	**79.58**	**27708.35**	**79.87**	**35606.55**	**82.21**
=Gross Profit	**4460.50**	31.64	4767.75	27.29	4547.76	21.38	5931.39	22.91	5839.04	20.03	6454.88	19.72	7673.40	20.22	7582.31	20.42	6984.61	20.13	7702.86	17.79
Add:-Miscellaneous I	102.26	0.73	131.16	0.75	102.14	0.48	132.66	0.51	120.70	0.41	444.35	1.36	564.15	1.49	506.08	1.36	495.45	1.43	465.82	1.08
Total Income	**4562.76**	**32.37**	**4898.91**	**28.04**	**4649.90**	**21.86**	**6064.05**	**23.42**	**5959.74**	**20.44**	**6899.23**	**21.08**	**8237.55**	**21.71**	**8088.39**	**21.78**	**7480.06**	**21.56**	**8168.68**	**18.87**
Exices	0.00	0.00	0.24	0.00	0.05	0.00	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0	0.00
Rents,Rates& Taxes	4.31	0.03	4.73	0.03	4.85	0.02	5.72	0.02	5.37	0.02	8.97	0.03	6.13	0.02	6.61	0.02	7.74	0.02	7.27	0.02
General exp.	4.68	0.03	4.50	0.03	4.5	0.02	5.76	0.02	7.99	0.03	7.60	0.02	8.28	0.02	8.68	0.02	11.27	0.03	8.61	0.02
Insurance Premium	9.84	0.07	10.22	0.06	13.78	0.06	12.43	0.05	17.12	0.06	16.95	0.05	18.59	0.05	20.28	0.05	24.59	0.07	34.61	0.08
Repairs & Maintance	153.21	1.09	177.47	1.02	143.69	0.68	237.85	0.92	230.19	0.79	279.73	0.85	265.92	0.70	222.17	0.60	253.23	0.73	228.1	0.53
Depreaciation	194.33	1.38	186.62	1.07	187.66	0.88	204.6	0.79	193.62	0.66	428.99	1.31	401.31	1.06	345.67	0.93	330.62	0.95	355.31	0.82
Reasearch & Extentic	217.51	1.54	243.08	1.39	180.05	0.85	208	0.80	244.34	0.84	275.12	0.84	342.86	0.90	363.7	0.98	324.61	0.94	361.24	0.83
Processing Exp.	429.22	3.04	575.97	3.30	489.05	2.30	598.15	2.31	555.85	1.91	575.88	1.76	607.47	1.60	592.93	1.60	587.62	1.69	630.76	1.46
Power & fuel	607.59	4.31	694.57	3.98	701.67	3.30	1061.06	4.10	1083.73	3.72	1177.54	3.60	1462.22	3.85	1409.54	3.80	1558.87	4.49	1701.86	3.93
Processing Exp.	**1620.69**	**11.49**	**1897.40**	**10.88**	**1725.30**	**8.11**	**2333.57**	**9.01**	**2338.21**	**8.03**	**2770.78**	**8.46**	**3112.78**	**8.20**	**2969.58**	**8.00**	**3098.55**	**8.92**	**3327.76**	**7.69**
Freight & Forwarding	14.38	0.10	20.92	0.12	27.95	0.13	46.89	0.18	42.45	0.15	50.59	0.15	73.36	0.19	70.19	0.19	69.15	0.20	114.93	0.27
Marketing exp.	20.47	0.15	31.46	0.18	30.64	0.14	36.17	0.14	14.61	0.05	6.97	0.02	7.39	0.02	9.11	0.02	9.93	0.03	16.96	0.04
Packaging exp.	2100.22	14.90	2122.80	12.15	1945.97	9.15	2433.92	9.40	2270.98	7.79	2299.84	7.03	2731.68	7.20	2710.08	7.30	2496.83	7.20	2583.3	5.96
Marketing Expense	**2135.07**	**15.15**	**2175.18**	**12.45**	**2004.56**	**9.42**	**2516.98**	**9.72**	**2328.04**	**7.99**	**2357.40**	**7.20**	**2812.43**	**7.41**	**2789.38**	**7.51**	**2575.91**	**7.43**	**2715.19**	**6.27**
Regi. & Licence exp.	5.44	0.04	4.59	0.03	3.42	0.02	4.28	0.02	6.2	0.02	3.40	0.01	6.48	0.02	14.21	0.04	5.43	0.02	12.87	0.03
Post-Telegram	13.75	0.10	14.43	0.08	20.66	0.10	19.66	0.08	20.84	0.07	20.92	0.06	26.33	0.07	22.42	0.06	22.08	0.06	22.53	0.05
Audit exp.	19.03	0.13	21.77	0.12	31.76	0.15	34.63	0.13	37.22	0.13	52.62	0.16	51.65	0.14	60.15	0.16	53.94	0.16	56.29	0.13
Administrative Exp	**38.22**	**0.27**	**40.79**	**0.23**	**55.84**	**0.27**	**58.57**	**0.23**	**64.26**	**0.22**	**76.94**	**0.23**	**84.46**	**0.23**	**96.78**	**0.26**	**81.45**	**0.24**	**91.69**	**0.21**
Staff PF & Gratutiy	60.72	0.43	58.03	0.33	69.78	0.33	114.53	0.44	112.76	0.39	281.09	0.86	332.39	0.88	365.9	0.99	304.23	0.88	350.25	0.81
Salaries & Wages	395.13	2.80	377.54	2.16	447.11	2.10	578.28	2.23	676.52	2.32	819.48	2.50	934.76	2.46	906.38	2.44	908.63	2.62	1233.09	2.85
Personnel Expense	**455.85**	**3.23**	**435.57**	**2.49**	**516.89**	**2.43**	**692.81**	**2.67**	**789.28**	**2.71**	**1100.57**	**3.36**	**1267.15**	**3.34**	**1272.28**	**3.43**	**1212.86**	**3.50**	**1583.34**	**3.66**
Interest & Bank Com	275.65	1.96	302.37	1.73	298.54	1.40	402.99	1.56	315.20	1.08	276.67	0.85	313.48	0.83	307.28	0.83	288.33	0.83	266.21	0.61
Financial Expenses	**275.65**	**1.96**	**302.37**	**1.73**	**298.54**	**1.40**	**402.99**	**1.56**	**315.20**	**1.08**	**276.67**	**0.85**	**313.48**	**0.83**	**307.28**	**0.83**	**288.33**	**0.83**	**266.21**	**0.61**
Grand Total Expen	**4525.48**	**32.10**	**4851.31**	**27.78**	**4601.13**	**21.63**	**6004.92**	**23.19**	**5834.99**	**20.03**	**6582.36**	**20.10**	**7590.30**	**20.01**	**7435.30**	**20.03**	**7257.10**	**20.92**	**7984.19**	**18.44**
Profit Before Tax	37.28	0.27	**47.60**	**0.26**	**48.77**	**0.23**	**59.13**	**0.23**	**124.75**	**0.41**	**316.87**	**0.98**	**647.25**	**1.70**	**653.09**	**1.75**	**222.96**	**0.64**	**184.49**	**0.43**
Less:-Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bad Debt Re& Sil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
= Profit After Tax	**37.28**	**0.27**	**47.60**	**0.26**	**48.77**	**0.23**	**59.13**	**0.23**	**124.75**	**0.41**	**316.87**	**0.98**	**647.25**	**1.70**	**653.09**	**1.75**	**222.96**	**0.64**	**184.49**	**0.43**

Source: *Computed from Published Annual Reports of Sabar Dairy*

Table 3.1 makes it is evident that during the period under study, cost of milk procurement registered an increasing trend during the first three years, fifth and sixth year, and again an increasing in the last two years. A declining trend in the fourth, seventh and eighth years during the study period. The cost of milk procurement was the highest in the year 2002-03 when it was 82.21 percentage of the sale and was the lowest in the year 1993-94 which was 68.36 percent of sale. Of all the components of the cost, the procurement cost of milk is the highest sharing more than 68 percent during the study period. Its' share varied from 68.36 percent to 82.21 percent. The average share for all the years under study has come to 77.85 percent. If this average is taken as a standard one, the procurement cost is more than standard after fourth year. The cost of procurement was increasing due to competition with private dairies.

The processing expenses take the second largest portion after first four years during the study period. It ranged from 7.69 percent to 11.49 percent during study period. Further it showed decreasing trend year after year during study period. The marketing expenses share the second largest portion in the total sale during first four years of study period than it takes place third. It ranged from 6.27 percent to 15.15 percent during the year under study period. Generally, It showed decreasing trend year after year during the study period.

The administrative expenses share the least part in the total cost. It varied from 0.21 percent to 0.27 percent during period under study. The personnel expenses took the fourth position in the total sale. It ranged from 2.43 percent to 3.66 percent during study period. Generally it showed mixed trend during the study period.

The financial expenses took fifth place of the total cost. It ranged from 0.61 percent to 1.96 percent during the study period. Further, It showed decreasing trend year after year during study period.

The miscellaneous income contributed a very little share towards the profit during all years of the period under study. The proportion of miscellaneous income in the total revenue is negligible. It varied from 0.41 percent to 0.75 percent during first five years and 1.08 percent to 1.43 percent during the last five years. It affected positive to profit of the unit.

The unit did not spare any amount for the payments of taxes during all the years of the study period. The profit after tax of the unit witnessed a fluctu-

ating trend during the study period. It ranged from 0.23 percent to 1.75 percent of the sale. On the above analysis it may said that the **Sabar Dairy** is healthy unit from the view point of profitability.

Over all trend of expenditure of manufacturing, marketing, administrative, personnel and financial expenses registered a continuous decreasing during the period under study. It affected the favorable to the profit of the unit. It strengthens the unit for future.

Table 3.2
Abridged & Common Size Income Statement of MEHSANA District Co-Operative Milk Producers's Union Ltd.
From 1993-94 to 2002-03

(Rupees In Lacs)

Particulars	1993-94		1994-95		1995-96		1996-97		1997-98		1998-99		1999-00		2000-01		2001-02		2002-03	
	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%
Sales	29163.13	100.00	34003.48	100.00	41001.97	100.00	45541.75	100.00	53771.39	100.00	65298.41	100.00	68672.47	100.00	65914.32	100.00	66577.01	100.00	74718.35	100.00
Opening stock	5330.60		5780.57		2580.45		2043.18		5643.02		5204.50		2065.84		2722.99		4448.92		7095.72	
Add:-Purchases	22237.19		23558.52		32956.66		40275.42		44019.00		52127.35		57947.55		55554.53		56977.71		62203.55	
Less:-Closing stock	5780.57		2580.45		2043.18		5643.02		5204.50		2065.84		2722.99		4448.92		7095.72		7027.71	
Procurement Cost	**21787.22**	**74.71**	**26758.64**	**78.69**	**33493.93**	**81.69**	**36675.58**	**80.53**	**44457.52**	**82.68**	**55266.01**	**84.64**	**57290.40**	**83.43**	**53828.60**	**81.66**	**54330.91**	**81.61**	**62271.56**	**83.34**
=Gross Profit	**7375.91**	25.29	7244.84	21.31	7508.04	18.31	8866.17	19.47	9313.87	17.32	10032.40	15.36	11382.07	16.57	12085.72	18.34	12246.10	18.39	12446.79	16.66
Add:-Miscellaneous Inc	313.50	1.07	204.63	0.60	167.47	0.41	191.21	0.42	145.17	0.27	318.37	0.49	396.74	0.58	254.49	0.39	218.94	0.33	164.58	0.22
Total Income	**7689.41**	**26.36**	**7449.47**	**21.91**	**7675.51**	**18.72**	**9057.38**	**19.89**	**9459.04**	**17.59**	**10350.77**	**15.85**	**11778.81**	**17.15**	**12340.21**	**18.73**	**12465.04**	**18.72**	**12611.37**	**16.88**
Exices	18.12	0.06	10.04	0.03	2.29	0.01	48.63	0.11	86.08	0.16	258.29	0.40	218.88	0.32	264.17	0.40	170.75	0.26	136.57	0.18
Rents,Rates& Taxes	22.89	0.08	15.63	0.05	11.76	0.03	13.05	0.03	23.24	0.04	14.48	0.02	5.68	0.01	15.95	0.02	14.23	0.02	20.67	0.03
General exp.	29.74	0.10	44.41	0.13	36.80	0.09	41.64	0.09	55.40	0.10	68.53	0.10	53.86	0.08	64.91	0.10	66.59	0.10	70.58	0.09
Insurance Premium	16.57	0.06	16.59	0.05	15.72	0.04	23.37	0.05	22.50	0.04	20.52	0.03	20.34	0.03	16.78	0.03	25.00	0.04	42.99	0.06
Repairs & Maintance	214.25	0.73	213.44	0.63	240.87	0.59	349.50	0.77	364.98	0.68	362.31	0.55	362.33	0.53	359.14	0.54	366.01	0.55	394.77	0.53
Depreaciation	229.73	0.79	226.58	0.67	239.94	0.59	282.39	0.62	398.14	0.74	514.43	0.79	622.97	0.91	886.96	1.35	774.30	1.16	667.78	0.89
Reasearch & Extention	272.83	0.94	250.35	0.74	237.58	0.58	284.89	0.63	300.10	0.56	317.26	0.49	417.15	0.61	0.00	0.00	0.00	0.00	0.00	0.00
Processing Exp.	431.39	1.48	510.11	1.50	641.64	1.56	622.52	1.37	596.79	1.11	631.66	0.97	602.38	0.88	734.52	1.11	988.11	1.48	802.64	1.07
Power & fuel	890.13	3.05	983.49	2.89	885.74	2.16	1134.91	2.49	1358.17	2.53	1521.87	2.33	1971.71	2.87	2109.17	3.20	2064.75	3.10	2065.51	2.76
Processing Exp.	**2125.65**	**7.29**	**2270.64**	**6.69**	**2312.34**	**5.65**	**2800.90**	**6.16**	**3205.40**	**5.96**	**3709.35**	**5.68**	**4275.30**	**6.24**	**4451.60**	**6.75**	**4469.74**	**6.71**	**4201.51**	**5.61**
Freight & Forwarding	58.06	0.20	62.58	0.18	56.52	0.14	102.99	0.23	104.35	0.19	119.25	0.18	142.30	0.21	134.80	0.20	135.45	0.20	152.49	0.20
Marketing exp.	78.73	0.27	106.27	0.31	112.09	0.27	118.62	0.26	40.53	0.08	42.20	0.06	48.63	0.07	49.45	0.08	59.56	0.09	171.75	0.23
Packaging exp.	3990.82	13.68	3530.10	10.38	3749.96	9.15	4206.84	9.24	3969.75	7.38	4432.87	6.79	4865.36	7.08	4594.72	6.97	4619.81	6.94	4303.81	5.76
Marketing Expenses	**4127.61**	**14.15**	**3698.95**	**10.87**	**3918.57**	**9.56**	**4428.45**	**9.73**	**4114.63**	**7.65**	**4594.32**	**7.03**	**5056.29**	**7.36**	**4778.97**	**7.25**	**4814.82**	**7.23**	**4628.05**	**6.19**
Co-operative Developm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	181.37	0.28	152.14	0.23	234.07	0.31
Post-Telegram	17.99	0.06	17.96	0.05	18.75	0.05	19.60	0.04	19.94	0.04	17.73	0.03	21.67	0.03	24.48	0.04	26.05	0.04	25.41	0.03
Audit exp.	24.83	0.09	30.69	0.09	46.30	0.11	41.81	0.09	45.36	0.08	65.24	0.10	61.67	0.09	66.23	0.10	68.17	0.10	75.73	0.10
Administrative Expen	**42.82**	**0.15**	**48.65**	**0.14**	**65.05**	**0.16**	**61.41**	**0.13**	**65.30**	**0.12**	**82.97**	**0.13**	**83.34**	**0.12**	**272.08**	**0.42**	**246.36**	**0.37**	**335.21**	**0.44**
Staff PF & Gratutiy	144.65	0.50	661.24	1.94	179.62	0.44	207.49	0.46	0.00	0.00	0.00	0.00	0.00	0.00	395.33	0.60	407.28	0.61	532.18	0.71
Salaries & Wages	634.50	2.18	177.35	0.52	733.55	1.79	854.13	1.88	1063.44	1.98	1248.31	1.91	1544.00	2.25	1448.01	2.20	1600.17	2.40	1979.35	2.65
Personnel Expenses	**779.15**	**2.68**	**838.59**	**2.46**	**913.17**	**2.23**	**1061.62**	**2.34**	**1063.44**	**1.98**	**1248.31**	**1.91**	**1544.00**	**2.25**	**1843.34**	**2.80**	**2007.45**	**3.01**	**2511.53**	**3.36**
Interest & Bank Comm	522.40	1.79	467.55	1.38	388.32	0.95	598.85	1.31	869.79	1.62	500.41	0.77	511.41	0.74	583.79	0.89	603.26	0.91	588.68	0.79
Financial Expenses	522.40	1.79	**467.55**	**1.38**	**388.32**	**0.95**	**598.85**	**1.31**	**869.79**	**1.62**	**500.41**	**0.77**	**511.41**	**0.74**	**583.79**	**0.89**	**603.26**	**0.91**	**588.68**	**0.79**
Grand Total Expendi	**7597.63**	**26.06**	**7324.38**	**21.54**	**7597.45**	**18.55**	**8951.23**	**19.67**	**9318.56**	**17.33**	**10135.36**	**15.52**	**11470.34**	**16.71**	**11929.78**	**18.11**	**12141.63**	**18.23**	**12264.98**	**16.39**
Profit Before Tax	91.78	0.30	**125.09**	**0.37**	**78.06**	**0.17**	**106.15**	**0.22**	**140.48**	**0.26**	**215.41**	**0.33**	**308.47**	**0.44**	**410.43**	**0.62**	**323.41**	**0.49**	**346.39**	**0.49**
Less:-Tax	22.00	0.08	3.00	0.01	5.00	0.01	9.00	0.02	28.00	0.05	15.00	0.02	10.00	0.01	15.00	0.02	15.00	0.02	80.00	0.11
Donation	0.00	0.00	50.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.13	0.01	18.40	0.03	0.05	0.00	0.00	0.00
= Profit After Tax	**69.78**	**0.22**	**72.09**	**0.21**	**73.06**	**0.16**	**97.15**	**0.20**	**112.48**	**0.21**	**200.41**	**0.31**	**291.34**	**0.42**	**377.03**	**0.57**	**308.36**	**0.47**	**266.39**	**0.38**

Source: *Computed from Published Annual Reports of Dudh Sagar Dairy*

The common size income statement (P & L A/c) of the Mehsana District Co-operative Milk Producers' Union Ltd. has been presented in table 3.2 from 1993-94 to 2002-03.

From table 3.2 the total sales value was increased during the study period except the year 2000-01. The highest sales was Rs.74718.35 lacs in the year 2002-03 and the lowest sales was Rs.29163.13 lacs in the year 1993-94.

It can be remarked from the table 3.2 that the cost of milk procurement registered a mixed trend during the period under study. The cost of milk procurement was always more then 74.70 percent of the total sales during the period under study. It was the highest in the year 1998-99 when it was 84.64 percent and was the lowest of 74.71 percent of sales in the year 1993-94. However, the absolute figures always increase during the study period it was Rs.29163.13 lakhs in 1993-94 which went up to Rs.74718.35 lakhs in 2002-03.

The gross profit registered mixed trend during the period under study. It ranged between 15.36 percent and 25.29 percent of the sales respectively during 1998-99 and 1993-94. The processing expenses ranged from 5.61 percent to 7.29 percent of the sales during the period under study. The processing expenses registered mixed trend during the period under study. The marketing expenses ranged from 6.19 percent to 14.15 percent during the period under study. It showed decreasing trend during the study period it is good sign for the unit. It was always more than 6.18 percent of sales during the study period. The administrative expenses consist of stationary, audit, co-operative development expenses and insurance expenses. It varied from 0.12 percent to 0.44 percent of sales during the period under study. It represented mixed trend during the period under study. The personnel expenses include salaries and wages, provident fund and gratuity paid to employees. It showed mixed trend during the period under study. It ranged from 1.91 percent to 3.36 percent of sales during the period under study. The financial expenses include interest paid for loan borrowed and bank commission. It ranged from 0.74 percent to 1.79 percent of sales during the period under study. It contributed a very little share in the total expenditure during the period under study. The miscellaneous income in the unit mainly consists of income from bank interest, dividend and interest on non trading investment, profit on sale of assets etc. The miscellaneous income contributed a very little share towards the profit during the period under study.

It ranged from 0.22 percent to 1.07 percent of sales during the study period. The profit after tax showed mixed trend during the period under study. It ranged from 0.16 percent to 0.57 percent of sales during the study period. It was the highest in the year 2000-01 which was 0.57 percent of sales and the lowest of 0.16 percent of sales in the year 1995-96. However, the performance of the unit is good during the period under study. The profit after taxes is normal during the study period.

Table 3.3
Abridged & Common Size Income Statement of BANASKANTHA District Co-Operative Milk Producers's Union Ltd. From 1993-94 to 2002-03

(Rupees In Lacs)

Particulars	1993-94		1994-95		1995-96		1996-97		1997-98		1998-99		1999-00		2000-01		2001-02		2002-03	
	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css
Sales	7984.86	100.00	10762.57	100.00	17717.29	100.00	22330.74	100.00	25103.87	100.00	32739.77	100.00	34073.87	100.00	35549.50	100.00	37352.47	100.00	46036.20	100.00
Opening stock	554.25		1082.44		1180.85		834.71		1906.81		2626.95		1594.18		2307.80		2292.64		5697.04	
Add:-Purchases	6007.83		7921.54		13878.45		19066.50		21693.77		26799.32		28871.62		28253.84		31383.34		36572.25	
Less:-Closing stock	1082.44		1180.85		834.71		1906.81		2626.95		1594.18		2307.80		2292.64		5697.04		6295.59	
Procurement Cost	**5479.64**	**68.63**	**7823.13**	**72.69**	**14224.59**	**80.29**	**17994.40**	**80.58**	**20973.63**	**83.55**	**27832.09**	**85.01**	**28158.00**	**82.64**	**28269.00**	**79.52**	**27978.94**	**74.91**	**35973.70**	**78.14**
=Gross Profit	**2505.22**	31.37	2939.44	27.31	3492.70	19.71	4336.34	19.42	4130.24	16.45	4907.68	14.99	5915.87	17.36	7280.50	20.48	9373.53	25.09	10062.50	21.86
Add:-Miscellaneous I	39.50	0.49	19.02	0.18	24.79	0.14	20.32	0.09	67.37	0.27	198.80	0.61	302.05	0.89	264.80	0.74	266.82	0.71	177.73	0.39
Total Income	**2544.72**	**31.86**	**2958.46**	**27.49**	**3517.49**	**19.85**	**4356.66**	**19.51**	**4197.61**	**16.72**	**5106.48**	**15.60**	**6217.92**	**18.25**	**7545.30**	**21.22**	**9640.35**	**25.80**	**10240.23**	**22.25**
Exices	0.25	0.00	1.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rents,Rates& Taxes	0.95	0.01	0.62	0.01	0.78	0.00	3.20	0.01	10.26	0.04	13.58	0.04	14.74	0.04	15.51	0.04	9.99	0.03	27.53	0.06
General exp.	7.87	0.10	8.67	0.08	10.27	0.06	11.61	0.05	17.53	0.07	26.96	0.08	39.09	0.11	40.79	0.11	34.07	0.09	33.56	0.07
Insurance Premium	7.58	0.09	10.38	0.10	9.74	0.05	8.26	0.04	10.76	0.04	18.04	0.06	13.27	0.04	7.32	0.02	33.90	0.09	37.06	0.08
Repairs & Maintance	124.91	1.56	178.30	1.66	139.00	0.78	168.71	0.76	178.07	0.71	192.36	0.59	212.84	0.62	154.90	0.44	166.05	0.44	209.71	0.46
Depreaciation	106.66	1.34	188.16	1.75	231.60	1.31	244.25	1.09	308.39	1.23	322.54	0.99	343.48	1.01	860.10	2.42	2091.23	5.60	2106.85	4.58
Reasearch & Extentic	124.67	1.56	137.73	1.28	181.58	1.02	224.42	1.00	232.43	0.93	316.60	0.97	341.58	1.00	162.10	0.46	136.85	0.37	125.71	0.27
Processing Exp.	232.87	2.92	249.56	2.32	289.00	1.63	330.04	1.48	229.22	0.91	321.86	0.98	518.68	1.52	595.62	1.68	795.74	2.13	642.14	1.39
Power & fuel	568.12	7.11	599.78	5.57	684.48	3.86	961.17	4.30	1000.86	3.99	1052.72	3.22	1331.38	3.91	1519.12	4.27	1920.12	5.14	2286.27	4.97
Processing Exp.	**1173.88**	**14.69**	**1374.25**	**12.78**	**1546.45**	**8.71**	**1951.66**	**8.73**	**1987.52**	**7.92**	**2264.66**	**6.93**	**2815.06**	**8.25**	**3355.46**	**9.44**	**5187.95**	**13.89**	**5468.83**	**11.88**
Freight & Forwarding	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marketing exp.	28.22	0.35	29.36	0.27	51.74	0.29	77.76	0.35	52.70	0.21	83.92	0.26	103.87	0.30	107.58	0.30	157.77	0.42	175.27	0.38
Packaging exp.	865.94	10.84	1023.99	9.51	1201.33	6.78	1476.34	6.61	1202.61	4.79	1455.62	4.45	1816.97	5.33	1757.46	4.94	1845.49	4.94	1951.79	4.24
Marketing Expense	**894.16**	**11.19**	**1053.35**	**9.78**	**1253.07**	**7.07**	**1554.10**	**6.96**	**1255.31**	**5.00**	**1539.54**	**4.71**	**1920.84**	**5.63**	**1865.04**	**5.24**	**2003.26**	**5.36**	**2127.06**	**4.62**
Co-operative Develop	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Post-Telegram	11.76	0.15	13.31	0.12	15.13	0.09	17.21	0.08	17.97	0.07	25.14	0.08	25.11	0.07	18.76	0.05	15.16	0.04	14.93	0.03
Audit exp.	12.75	0.16	14.93	0.14	26.99	0.15	21.06	0.09	23.21	0.09	31.42	0.10	37.91	0.11	36.25	0.10	35.91	0.10	38.61	0.08
Administrative Exp	**24.51**	**0.31**	**28.24**	**0.26**	**42.12**	**0.24**	**38.27**	**0.17**	**41.18**	**0.16**	**56.56**	**0.18**	**63.02**	**0.18**	**55.01**	**0.15**	**51.07**	**0.14**	**53.54**	**0.11**
Staff PF & Gratutiy	55.88	0.70	57.92	0.54	84.45	0.48	90.35	0.40	107.06	0.43	172.55	0.53	181.59	0.53	192.94	0.54	201.44	0.54	265.36	0.58
Salaries & Wages	218.32	2.73	254.12	2.36	357.51	2.02	373.92	1.67	390.86	1.56	518.34	1.58	593.27	1.74	744.18	2.09	830.32	2.22	835.61	1.82
Personnel Expense	**274.20**	**3.43**	**312.04**	**2.90**	**441.96**	**2.50**	**464.27**	**2.07**	**497.92**	**1.99**	**690.89**	**2.11**	**774.86**	**2.27**	**937.12**	**2.63**	**1031.76**	**2.76**	**1100.97**	**2.40**
Interest & Bank Com	138.74	1.74	158.33	1.47	187.98	1.06	264.49	1.18	287.54	1.15	327.92	1.00	320.24	0.94	1326.58	3.73	1265.24	3.39	1353.48	2.94
Financial Expenses	**138.74**	**1.74**	**158.33**	**1.47**	**187.98**	**1.06**	**264.49**	**1.18**	**287.54**	**1.15**	**327.92**	**1.00**	**320.24**	**0.94**	**1326.58**	**3.73**	**1265.24**	**3.39**	**1353.48**	**2.94**
Grand Total Expenc	**2505.49**	**31.36**	**2926.21**	**27.19**	**3471.58**	**19.58**	**4272.79**	**19.11**	**4069.47**	**16.22**	**4879.57**	**14.93**	**5894.02**	**17.27**	**7539.21**	**21.19**	**9539.28**	**25.54**	**10103.88**	**21.95**
Profit Before Tax	39.23	0.50	**32.25**	**0.30**	**45.91**	**0.27**	**83.87**	**0.40**	**128.14**	**0.50**	**226.91**	**0.67**	**323.90**	**0.98**	**6.09**	**0.03**	**101.07**	**0.26**	**136.35**	**0.30**
Less:-Tax	15.00	0.19	16.00	0.15	18.00	0.10	24.00	0.14	36.00	0.14	77.15	0.24	97.27	0.29	0.00	0.00	0.00	0.00	0.00	0.00
Donation	9.14	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
= Profit After Tax	**15.09**	**0.20**	**16.25**	**0.15**	**27.91**	**0.17**	**59.87**	**0.26**	**92.14**	**0.36**	**149.76**	**0.43**	**226.63**	**0.69**	**6.09**	**0.03**	**101.07**	**0.26**	**136.35**	**0.30**

Source: *Computed from Published Annual Reports of Banas Dairy*

The common size income statement (P & L A/c) of the Banaskantha District Co-operative Milk Producers' Union Ltd. has been presented in table 3.3 from 1993-94 to 2002-03. Table 3.3 indicates that the total sales value was increased during the study period. The highest sales was Rs.46036.20 lacs in the year 2002-03 and the lowest sales was Rs.7984.86 lacs in the year 1993-94.

It can be remarked from the table 3.3 that the cost of milk procurement registered a fluctuating trend during the period under study. The cost of milk procurement was always more than 68.62 percent of the total sales during the period under study. It was highest in the year 1998-99 when it was 85.01 percent and was the lowest in the year 1993-1994 it was 68.63 percent of sales. However, the absolute figures always increase during the study period it was Rs.7984.86 lakhs in 1993-94 which went up to Rs.46036.20 lakhs in 2002-03 it can be seen from the table 3.3.

The gross profit registered mixed trend during the period under study. It ranged between 14.99 percent in 1998-99 and 31.37 percent in 1993-94 of the sales. The processing expenses ranged from 6.93 percent to 14.69 percent during the period under study. The processing expenses registered mixed trend during the period under study. The marketing expenses ranged from 4.62 percent to 11.19 percent during the period under study showed fluctuating trend during the study period. It was always more than 4.61 percent of sales during the study period. The administrative expenses consists of stationary, audit, and insurance expenses. It varied from 0.11 percent to 0.31 percent of sales during the period under study. It was mixed trend during the period under study. It showed a decreasing trend up to 1997-98, but it increased in 1998-99 as compared to 1997-98. It again decreased up to 2002-03 as compared to the year 1998-99. The personnel expenses include salaries and wages, provident fund and gratuity paid to employees. It showed mixed trend during the period under study. It ranged from 1.99 percent to 3.43 percent of sales during the period under study. The financial expenses include interest paid for loan borrowed and bank commission. It ranged from 0.94 percent to 3.73 percent of sales during the period under study. It contributed a very little share in the total expenditure during the period under study. The unit contributed donation in the year 1993-94. The unit did not provide taxation during the last three years of study period. The miscellaneous income in the unit mainly consists of

income from bank interest, dividend and interest on non trading investment, profit on sale of assets etc. The miscellaneous income contributed a very little share towards the profit during the period under study. It ranged from 0.14 percent to 0.89 percent of sales during the study period. The net profit after tax ranged from 0.15 percent to 0.69 percent of sales during the study period. It was the highest in the year 1999-00 which was 0.69 percent of sales.

However, the performance of the unit is good during the period under study except the year 2000-01. The profit after the taxes is normal during the study period.

Table 3.4
Abridged & Common Size Income Statement of SUMUL District Co-Operative Milk Producers's Union Ltd. From 1993-94 to 2002-03

(Rupees In Lacs)

Particulars	1993-94		1994-95		1995-96		1996-97		1997-98		1998-99		1999-00		2000-01		2001-02		2002-03	
	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%
Sales	13039.80	100.00	14881.37	100.00	18363.96	100.00	23446.76	100.00	28755.63	100.00	29006.07	100.00	31066.52	100.00	34469.00	100.00	35256.35	100.00	38187.51	100.00
Opening stock	843.69		826.76		881.90		1516.64		1686.47		1109.32		1144.91		1492.89		1969.09		1821.52	
Add:-Purchases	11095.51		12741.82		16276.18		20285.17		24202.49		24792.39		26760.01		29944.78		29852.02		33257.32	
Less:-Closing stock	826.76		881.90		1516.64		1686.47		1109.32		1144.91		1492.89		1969.09		1821.52		2132.94	
Procurement Cost	**11112.44**	**85.22**	**12686.68**	**85.25**	**15641.44**	**85.17**	**20115.34**	**85.79**	**24779.64**	**86.17**	**24756.80**	**85.35**	**26412.03**	**85.02**	**29468.58**	**85.49**	**29999.59**	**85.09**	**32945.90**	**86.27**
=Gross Profit	**1927.36**	14.78	2194.69	14.75	2722.52	14.83	3331.42	14.21	3975.99	13.83	4249.27	14.65	4654.49	14.98	5000.42	14.51	5256.76	14.91	5241.61	13.73
Add:-Miscellaneous I	109.94	0.84	125.30	0.84	123.95	0.67	134.44	0.57	145.23	0.51	204.89	0.71	280.11	0.90	388.56	1.13	361.87	1.03	387.19	1.01
Total Income	**2037.30**	**15.62**	**2319.99**	**15.59**	**2846.47**	**15.50**	**3465.86**	**14.78**	**4121.22**	**14.34**	**4454.16**	**15.36**	**4934.60**	**15.88**	**5388.98**	**15.64**	**5618.63**	**15.94**	**5628.80**	**14.74**
Exices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rents,Rates& Taxes	10.62	0.08	15.78	0.11	14.02	0.08	21.84	0.09	10.04	0.03	18.63	0.06	8.18	0.03	8.81	0.03	8.06	0.02	10.19	0.03
General exp.	8.14	0.06	7.79	0.05	21.83	0.12	18.68	0.08	15.60	0.05	14.66	0.05	65.40	0.21	68.04	0.20	70.41	0.20	10.07	0.03
Insurance Premium	12.45	0.10	14.31	0.10	20.36	0.11	27.18	0.12	36.52	0.13	28.47	0.10	32.72	0.11	23.42	0.07	34.35	0.10	29.65	0.08
Repairs & Maintance	163.59	1.25	169.32	1.14	214.40	1.17	207.12	0.88	239.45	0.83	301.00	1.04	304.63	0.98	317.18	0.92	316.49	0.90	295.48	0.77
Depreaciation	114.28	0.88	126.15	0.85	149.64	0.81	189.19	0.81	342.15	1.19	334.59	1.15	304.19	0.98	315.94	0.92	355.74	1.01	400.26	1.05
Reasearch & Extentic	12.85	0.10	93.68	0.63	84.67	0.46	167.25	0.71	325.25	1.13	284.28	0.98	378.35	1.22	496.32	1.44	547.34	1.55	406.45	1.06
Processing Exp.	27.72	0.21	36.93	0.25	75.33	0.41	163.05	0.70	144.86	0.50	143.47	0.49	169.99	0.55	215.26	0.62	259.04	0.73	283.93	0.74
Power & fuel	272.16	2.09	281.97	1.89	344.38	1.88	511.29	2.18	617.15	2.15	681.81	2.35	836.36	2.69	924.70	2.68	920.70	2.61	890.73	2.33
Processing Exp.	**621.81**	**4.77**	**745.93**	**5.02**	**924.63**	**5.04**	**1305.60**	**5.57**	**1731.02**	**6.01**	**1806.91**	**6.22**	**2099.82**	**6.77**	**2369.67**	**6.88**	**2512.13**	**7.12**	**2326.76**	**6.09**
Freight & Forwarding	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marketing exp.	168.18	1.29	197.51	1.33	238.79	1.30	279.90	1.19	354.83	1.23	361.12	1.24	376.75	1.21	429.65	1.25	601.58	1.71	496.02	1.30
Packaging exp.	530.31	4.07	532.08	3.58	707.70	3.85	833.16	3.55	863.15	3.00	866.63	2.99	972.53	3.13	1070.77	3.11	1090.80	3.09	1187.15	3.11
Marketing Expense	**698.49**	**5.36**	**729.59**	**4.91**	**946.49**	**5.15**	**1113.06**	**4.74**	**1217.98**	**4.23**	**1227.75**	**4.23**	**1349.28**	**4.34**	**1500.42**	**4.36**	**1692.38**	**4.80**	**1683.17**	**4.41**
Co-operative Develop	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Post-Telegram	25.35	0.19	30.62	0.21	30.73	0.17	25.04	0.11	32.55	0.11	24.93	0.09	25.50	0.08	41.01	0.12	41.78	0.12	42.38	0.11
Audit exp.	16.96	0.13	20.55	0.14	28.50	0.16	25.00	0.11	39.18	0.14	39.57	0.14	26.40	0.08	44.51	0.13	41.00	0.12	41.00	0.11
Administrative Exp	**42.31**	**0.32**	**51.17**	**0.35**	**59.23**	**0.33**	**50.04**	**0.22**	**71.73**	**0.25**	**64.50**	**0.23**	**51.90**	**0.16**	**85.52**	**0.25**	**82.78**	**0.24**	**83.38**	**0.22**
Staff PF & Gratutiy	91.48	0.70	105.30	0.71	120.00	0.65	139.82	0.60	169.02	0.59	180.31	0.62	224.32	0.72	215.20	0.62	192.78	0.55	258.32	0.68
Salaries & Wages	466.28	3.58	493.41	3.32	622.04	3.39	627.67	2.68	666.81	2.32	901.31	3.11	918.34	2.96	870.09	2.52	856.70	2.43	997.46	2.61
Personnel Expense	**557.76**	**4.28**	**598.71**	**4.03**	**742.04**	**4.04**	**767.49**	**3.28**	**835.83**	**2.91**	**1081.62**	**3.73**	**1142.66**	**3.68**	**1085.29**	**3.14**	**1049.48**	**2.98**	**1255.78**	**3.29**
Interest & Bank Com	105.48	0.81	152.14	1.02	148.54	0.81	212.52	0.91	228.72	0.80	235.63	0.81	261.43	0.84	312.37	0.91	245.01	0.69	231.09	0.61
Financial Expenses	**105.48**	**0.81**	**152.14**	**1.02**	**148.54**	**0.81**	**212.52**	**0.91**	**228.72**	**0.80**	**235.63**	**0.81**	**261.43**	**0.84**	**312.37**	**0.91**	**245.01**	**0.69**	**231.09**	**0.61**
Grand Total Expen	**2025.85**	**15.54**	**2277.54**	**15.33**	**2820.93**	**15.37**	**3448.71**	**14.72**	**4085.28**	**14.20**	**4416.41**	**15.22**	**4905.09**	**15.79**	**5353.27**	**15.54**	**5581.78**	**15.83**	**5580.18**	**14.62**
Profit Before Tax	11.45	0.08	**42.45**	**0.26**	**25.54**	**0.13**	**17.15**	**0.06**	**35.94**	**0.14**	**37.75**	**0.14**	**29.51**	**0.09**	**35.71**	**0.10**	**36.85**	**0.11**	**48.62**	**0.12**
Less:-Tax	0.00	0.00	20.00	0.13	10.00	0.05	5.00	0.03	20.00	0.07	20.00	0.07	10.00	0.03	15.00	0.04	15.00	0.04	20.00	0.05
Bad Debt Re& Sil	4.00	0.03	15.00	0.10	5.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
= Profit After Tax	**7.45**	**0.05**	**7.45**	**0.03**	**10.54**	**0.05**	**12.15**	**0.03**	**15.94**	**0.07**	**17.75**	**0.07**	**19.51**	**0.06**	**20.71**	**0.06**	**21.85**	**0.07**	**28.62**	**0.07**

Source: *Computed from Published Annual Reports of Sumul Dairy*

The common size income statement (P & L A/c) of the Sumul District Co-operative Milk Producers' Union Ltd. has been presented in table 3.4 from 1993-94 to 2002-03.

It can be remarked from the table 3.4 that the cost of milk procurement registered a mixed trend during the period under study. The cost of milk procurement was always more than 85 percent of the total sales during the period under study. It was the highest in the year 2002-03 when it was 86.27 percent and was the lowest 85.02 percent of sales in the year 1999-00. However, the absolute figures always increase during the study period it was Rs.13039.80 lakh in 1993-94 which went up to Rs.38187.51 lakh in 2002-03.

The gross profit registered mixed trend during the period under study. It ranged between 13.73 % and 14.98% of the sales respectively during 2002-03 and 1999-00. The processing expenses ranged from 4.77 percent to 7.12 percent during the period under study. The processing expenses registered an increasing trend except the last year of the period under study. The marketing expenses ranged from 4.23 percent to 5.36 percent during the period under study. It showed mixed trend during the study period. It was always more than 4.22 percent of sales during the study period. The administrative expenses consist of stationary, audit, and insurance expenses. It varied from 0.22 percent to 0.35 percent of sales during the period under study. It showed mixed trend during the period under study. It increased during 1994-95 as compared to the year 1993-94 but showed a decreasing trend from 1995-96 to 1999-00. It increased in the year 2000-01 as compared to 1999-00 but showed a decreasing trend during last two years. The personnel expenses include salaries and wages, provident fund and gratuity paid to employees. It showed mixed trend during the period under study. It ranged from 2.91 percent in 1997-98 to 4.28 percent in 1993-94 of sales during the period under study. The financial expenses include interest paid for loan borrowed and bank commission. It ranged from 0.61 percent in 2002-03 to 1.02 percent in 1994-5 of sales during the period under study. It contributed a very little share in the total expenditure during the period under study. The unit provided taxation from 1995-96 to 2002-03. The unit provided reserve for bed debts during the first three years of study period. The unit also provided for the jubilee function during the 1994-95.

The miscellaneous income of the unit mainly consists of income from

bank interest, dividend and interest on non trading investment etc. The miscellaneous income contributed a very little share towards the profit during the period under study. It ranged from 0.51 percent in 1997-98 to 1.13 percent in 2001-02 of sales during the study period. The profit after taxes showed profit during the period under study. It ranged from 0.05 percent to 0.07 percent of sales except the year 1994-95 during the study period.

However, the performance of the unit is normal during the period under study. The profit after the tax of the last six years marginally changed during the study period.

Table 3.5
Abridged & Common Size Income Statement of VALSAD District Co-Operative Milk Producers's Union Ltd.
From 1993-94 to 2002-03

(Rupees In Lacs)

Particulars	1993-94		1994-95		1995-96		1996-97		1997-98		1998-99		1999-00		2000-01		2001-02		2002-03	
	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%
Sales	3085.01	100.00	4126.28	100.00	5420.56	100.00	6950.54	100.00	7725.79	100.00	9721.77	100.00	12080.16	100.00	13630.97	100.00	15149.46	100.00	17597.96	100.00
Opening stock	82.60		201.01		59.30		131.20		121.49		137.90		156.39		278.39		206.38		227.79	
Add:-Purchases	2729.23		3277.50		4726.16		5834.96		6554.22		7555.89		9723.82		10879.90		12048.65		14134.18	
Less:-Closing stock	201.01		59.30		131.20		121.49		137.90		156.39		278.39		206.38		227.79		334.90	
Procurement Cost	**2610.82**	**84.63**	**3419.21**	**82.86**	**4654.26**	**85.86**	**5844.67**	**84.09**	**6537.81**	**84.62**	**7537.40**	**77.53**	**9601.82**	**79.48**	**10951.91**	**80.35**	**12027.24**	**79.39**	**14027.07**	**79.71**
=Gross Profit	**474.19**	15.37	707.07	17.14	766.30	14.14	1105.87	15.91	1187.98	15.38	2184.37	22.47	2478.34	20.52	2679.06	19.65	3122.22	20.61	3570.89	20.29
Add:-Miscellaneous	9.69	0.31	7.13	0.17	15.69	0.29	8.15	0.12	20.60	0.27	63.27	0.65	92.01	0.76	147.80	1.08	143.01	0.94	176.51	1.00
Total Income	**483.88**	**15.68**	**714.20**	**17.31**	**781.99**	**14.43**	**1114.02**	**16.03**	**1208.58**	**15.65**	**2247.64**	**23.12**	**2570.35**	**21.28**	**2826.86**	**20.73**	**3265.23**	**21.55**	**3747.40**	**21.29**
Exices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	161.86	1.66	304.92	2.52	0.00	0.00	0.00	0.00	0.00	0.00
Rents,Rates& Taxes	1.64	0.05	2.90	0.07	2.81	0.05	3.54	0.05	8.74	0.11	14.58	0.15	22.44	0.19	27.56	0.20	800.44	5.28	1112.34	6.32
General exp.	3.43	0.11	4.56	0.11	7.73	0.14	9.15	0.13	14.10	0.18	73.18	0.75	60.13	0.50	76.23	0.56	64.71	0.43	98.94	0.56
Insurance Premium	4.64	0.15	7.84	0.19	7.84	0.14	10.26	0.15	10.58	0.14	17.89	0.18	11.99	0.10	14.07	0.10	14.35	0.09	19.67	0.11
Repairs & Maintance	28.17	0.91	31.75	0.77	25.43	0.47	40.41	0.58	59.88	0.78	94.34	0.97	104.00	0.86	113.74	0.83	165.71	1.09	116.87	0.66
Depreaciation	20.61	0.67	91.30	2.21	72.03	1.33	77.27	1.11	124.85	1.62	187.66	1.93	167.77	1.39	267.03	1.96	284.09	1.88	226.17	1.29
Reasearch & Extenti	18.12	0.59	44.05	1.07	25.31	0.47	23.68	0.34	27.73	0.36	42.78	0.44	45.25	0.37	0.00	0.00	0.00	0.00	0.00	0.00
Processing Exp.	49.10	1.59	25.60	0.62	43.14	0.80	40.55	0.58	54.40	0.70	46.34	0.48	61.73	0.51	82.39	0.60	122.29	0.81	150.08	0.85
Power & fuel	53.73	1.74	70.45	1.71	87.99	1.62	115.27	1.66	179.99	2.33	231.73	2.38	321.92	2.66	380.35	2.79	414.07	2.73	456.31	2.59
Processing Exp.	**179.44**	**5.81**	**278.45**	**6.75**	**272.28**	**5.02**	**320.13**	**4.60**	**480.27**	**6.22**	**870.36**	**8.94**	**1100.15**	**9.10**	**961.37**	**7.04**	**1865.66**	**12.31**	**2180.38**	**12.38**
Freight & Forwarding	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.21	0.13	0.00	0.00	7.79	0.05	76.60	0.44
Marketing exp.	89.58	2.90	98.87	2.40	134.77	2.49	155.43	2.24	174.22	2.26	198.53	2.04	183.36	1.52	231.98	1.70	316.87	2.09	137.99	0.78
Packaging exp.	112.96	3.66	119.80	2.90	160.17	2.95	170.36	2.45	227.96	2.95	412.39	4.24	474.90	3.93	694.53	5.10	187.78	1.24	236.74	1.35
Marketing Expense	**202.54**	**6.56**	**218.67**	**5.30**	**294.94**	**5.44**	**325.79**	**4.69**	**402.18**	**5.21**	**610.92**	**6.28**	**674.47**	**5.58**	**926.51**	**6.80**	**512.44**	**3.38**	**451.33**	**2.57**
Co-operative Develop	0.00	0.00	15.61	0.38	0.00	0.00	0.00	0.00	5.36	0.07	0.00	0.00	0.00	0.00	46.42	0.34	83.56	0.55	68.96	0.39
Post-Telegram	7.88	0.26	11.55	0.28	12.74	0.24	13.04	0.19	21.61	0.28	24.10	0.25	29.60	0.25	25.52	0.19	56.35	0.37	32.09	0.18
Audit exp.	6.51	0.21	8.43	0.20	12.65	0.23	13.89	0.20	16.82	0.22	25.41	0.26	24.39	0.20	25.05	0.18	22.09	0.15	22.81	0.13
Administrative Exp	**14.39**	**0.47**	**35.59**	**0.86**	**25.39**	**0.47**	**26.93**	**0.39**	**43.79**	**0.57**	**49.51**	**0.51**	**53.99**	**0.45**	**96.99**	**0.71**	**162.00**	**1.07**	**123.86**	**0.70**
Staff PF & Gratutiy	18.70	0.61	23.29	0.56	28.06	0.52	64.20	0.92	61.30	0.79	113.12	1.16	130.30	1.08	162.89	1.19	177.67	1.17	192.76	1.10
Salaries & Wages	82.70	2.68	121.58	2.95	149.10	2.75	259.22	3.73	255.48	3.31	364.94	3.75	412.75	3.42	473.25	3.47	507.75	3.35	551.62	3.13
Personnel Expense	**101.40**	**3.29**	**144.87**	**3.51**	**177.16**	**3.27**	**323.42**	**4.65**	**316.78**	**4.10**	**478.06**	**4.91**	**543.05**	**4.50**	**636.14**	**4.66**	**685.42**	**4.52**	**744.38**	**4.23**
Interest & Bank Com	8.15	0.26	33.32	0.81	10.01	0.18	112.86	1.62	127.88	1.66	148.37	1.53	161.03	1.33	179.75	1.32	227.22	1.50	203.88	1.16
Financial Expenses	**8.15**	**0.26**	**33.32**	**0.81**	**10.01**	**0.18**	**112.86**	**1.62**	**127.88**	**1.66**	**148.37**	**1.53**	**161.03**	**1.33**	**179.75**	**1.32**	**227.22**	**1.50**	**203.88**	**1.16**
Grand Total Expen	**505.92**	**16.39**	**710.90**	**17.23**	**779.78**	**14.38**	**1109.13**	**15.95**	**1370.90**	**17.76**	**2157.22**	**22.17**	**2532.69**	**20.96**	**2800.76**	**20.53**	**3452.74**	**22.78**	**3703.83**	**21.04**
Profit Before Tax	-22.04	-0.71	**3.30**	**0.08**	**2.21**	**0.05**	**4.89**	**0.08**	**-162.32**	**-2.11**	**90.42**	**0.95**	**37.66**	**0.32**	**26.10**	**0.20**	**-187.51**	**-1.23**	**43.57**	**0.25**
Less:-Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.45	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.75	0.12
Donation	0.51	0.02	0.10	0.00	0.25	0.00	0.13	0.00	5.57	0.07	1.50	0.02	23.23	0.19	1.76	0.01	0.84	0.01	0.00	0.00
= Profit After Tax	**-22.55**	**-0.73**	**3.20**	**0.08**	**1.96**	**0.05**	**4.76**	**0.08**	**-182.34**	**-2.37**	**88.92**	**0.93**	**14.43**	**0.13**	**24.34**	**0.19**	**-188.35**	**-1.24**	**21.82**	**0.13**

Source: *Computed from Published Annual Reports of Vasudhara Dairy*

The common size income statement (P & L A/c) of the Valsad District Co-operative Milk Producers' Union Ltd. has been presented in table 3.5 from 1993-94 to 2002-03.

It can be seen from table 3.5 that the total sales value was increased during the study period. The highest sales was Rs.17597.96 lacs in the year 2002-03 and the lowest sales was Rs.3085.01 lacs in the year 1993-94. The analysis reveals the proportion of each component to the total sales in each year is made through the common size income statement.

It can be remarked from the table 3.5 that the cost of milk procurement registered a mixed trend during the period under study. The cost of milk procurement was always more than 77.52 percent of the total sales during the period under study. It was the highest in the year 1995-96 when it was 85.86 percent and was the lowest in the year 1998-99 when it was 77.53 percent of sales. However, the absolute figures always increase during the study period. It was Rs.3085.01 lakh in 1993-94 which went up to Rs.17597.96 lakh in 2002-03.

The gross profit registered mixed trend during the period under study. It ranged between 14.14 percent in 1995-96 and 22.47 percent in 1998-99. The processing expenses ranged from 4.60 percent to 12.38 percent during the period under study. The processing expenses registered mixed trend during the period under study. The marketing expenses ranged from 2.57 percent to 6.56 percent during the period under study. It showed mixed trend during the study period. It was always more than 2.56 percent of sales during the study period. The administrative expenses consist of stationary, audit fees, and insurance premium, Co-operative development expenses and TQM expenses. It varied from 0.39 percent to 1.07 percent of sales during the period under study. It showed mixed trend during the period under study. The personnel expenses include salaries and wages, provident fund and gratuity paid to employees. It showed mixed trend during the period under study. It ranged from 3.27 percent to 4.91 percent of sales during the period under study. The financial expenses include interest paid for loan borrowed and bank commission. It ranged from 0.26 percent to 1.66 percent of sales during the period under study. It contributed a very little share in the total expenditure during the period under study. The miscellaneous income in the unit mainly consists of income from bank interest, dividend and interest on non trading investment etc. The miscellaneous income

contributed a very little share towards the profit during the period under study. It ranged from 0.12 percent to 1.08 percent of sales during the study period. The profit after taxes showed profit during the period under study. It ranged from -2.37 percent to 0.93 percent of sales during the study period. The unit suffered losses during the year 1997-98 and 2001-02 due heavy processing expenses.

However, the performance of the unit is average during the period under study. The profit after the taxes is normal expect the years 1993-94, 1997-98 and 2001-02 during the study period.

Table 3.6
Abridged & Common Size Income Statement of BHARUCH Jilla Doodh Utpadak Sangh Ltd.
From 1993-94 to 2002-03

(Rupees In Lacs)

Particulars	1993-94		1994-95		1995-96		1996-97		1997-98		1998-99		1999-00		2000-01		2001-02		2002-03	
	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css	Rs.	Css
Sales	1015.28	100.00	1612.36	100.00	1879.41	100.00	1848.82	100.00	1743.30	100.00	1724.23	100.00	1681.12	100.00	1678.16	100.00	1743.51	100.00	2069.42	100.00
Opening stock	26.27		38.14		63.77		51.54		47.93		42.10		34.43		36.50		38.99		32.14	
Add:-Purchases	738.37		1309.84		1503.59		1466.83		1376.99		1340.71		1286.90		1288.67		1294.62		1666.20	
Less:-Closing stock	38.14		63.77		51.54		47.93		78.60		34.43		37.28		38.99		32.14		45.14	
Procurement Cost	**726.50**	**71.56**	**1284.21**	**79.65**	**1515.82**	**80.65**	**1470.44**	**79.53**	**1346.32**	**77.23**	**1348.38**	**78.20**	**1284.05**	**76.38**	**1286.18**	**76.64**	**1301.47**	**74.65**	**1653.20**	**79.89**
=Gross Profit	**288.78**	28.44	328.15	20.35	363.59	19.35	378.38	20.47	396.98	22.77	375.85	21.80	397.07	23.62	391.98	23.36	442.04	25.35	416.22	20.11
Add:-Miscellaneous	4.43	0.44	2.15	0.13	4.50	0.24	7.28	0.39	11.12	0.64	6.66	0.39	3.66	0.22	9.48	0.56	5.70	0.33	14.86	0.72
Total Income	**293.21**	**28.88**	**330.30**	**20.48**	**368.09**	**19.59**	**385.66**	**20.86**	**408.10**	**23.41**	**382.51**	**22.19**	**400.73**	**23.84**	**401.46**	**23.92**	**447.74**	**25.68**	**431.08**	**20.83**
Exices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rents,Rates& Taxes	1.03	0.10	0.01	0.00	0.93	0.05	1.54	0.08	0.79	0.05	0.01	0.00	1.28	0.08	1.06	0.06	1.68	0.10	1.35	0.07
General exp.	4.92	0.48	6.46	0.40	7.02	0.37	7.72	0.42	6.42	0.37	10.26	0.60	15.77	0.94	11.83	0.70	11.00	0.63	17.25	0.83
Insurance Premium	1.73	0.17	1.79	0.11	2.37	0.13	2.22	0.12	2.22	0.13	2.12	0.12	2.37	0.14	1.94	0.12	2.31	0.13	3.80	0.18
Repairs & Maintance	17.18	1.69	23.81	1.48	18.00	0.96	19.61	1.06	19.38	1.11	17.83	1.03	16.36	0.97	14.71	0.88	14.06	0.81	13.79	0.67
Depreaciation	8.38	0.83	9.11	0.57	15.32	0.82	19.60	1.06	19.12	1.10	4.84	0.28	12.33	0.73	12.42	0.74	48.38	2.77	33.36	1.61
Reasearch & Extenti	20.01	1.97	14.54	0.90	16.17	0.86	9.72	0.53	15.75	0.90	13.62	0.79	11.98	0.71	0.00	0.00	0.00	0.00	0.00	0.00
Processing Exp.	7.22	0.71	4.22	0.26	4.48	0.24	4.28	0.23	3.87	0.22	4.52	0.26	3.94	0.23	2.57	0.15	2.97	0.17	3.53	0.17
Power & fuel	22.84	2.25	24.21	1.50	31.82	1.69	37.83	2.05	43.63	2.50	47.84	2.77	52.28	3.11	54.85	3.27	52.04	2.98	65.04	3.14
Processing Exp.	**83.31**	**8.20**	**84.15**	**5.22**	**96.11**	**5.12**	**102.52**	**5.55**	**111.18**	**6.38**	**101.04**	**5.85**	**116.31**	**6.91**	**99.38**	**5.92**	**132.44**	**7.59**	**138.12**	**6.67**
Freight & Forwarding	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marketing exp.	31.21	3.07	44.09	2.73	59.85	3.18	59.36	3.21	54.93	3.15	38.26	2.22	34.03	2.02	34.10	2.03	35.83	2.06	17.77	0.86
Packaging exp.	36.63	3.61	53.38	3.31	66.30	3.53	51.85	2.80	37.95	2.18	37.12	2.15	39.55	2.35	42.08	2.51	38.43	2.20	37.37	1.81
Marketing Expense	**67.84**	**6.68**	**97.47**	**6.04**	**126.15**	**6.71**	**111.21**	**6.01**	**92.88**	**5.33**	**75.38**	**4.37**	**73.58**	**4.37**	**76.18**	**4.54**	**74.26**	**4.26**	**55.14**	**2.67**
Co-operative Develop	0.75	0.07	4.19	0.26	4.52	0.24	5.83	0.32	2.80	0.16	4.86	0.28	2.32	0.14	9.85	0.59	7.65	0.44	9.43	0.46
Post-Telegram	4.14	0.41	4.88	0.30	6.13	0.33	5.98	0.32	5.10	0.29	4.74	0.27	5.41	0.32	4.30	0.26	4.27	0.24	4.34	0.21
Audit exp.	8.78	0.86	16.82	1.04	11.03	0.59	7.69	0.42	19.38	1.11	15.10	0.88	13.34	0.79	14.38	0.86	12.42	0.71	15.00	0.72
Administrative Exp	**13.67**	**1.34**	**25.89**	**1.60**	**21.68**	**1.16**	**19.50**	**1.06**	**27.28**	**1.56**	**24.70**	**1.43**	**21.07**	**1.25**	**28.53**	**1.71**	**24.34**	**1.39**	**28.77**	**1.39**
Staff PF & Gratutiy	61.22	6.03	12.35	0.77	12.63	0.67	14.66	0.79	21.46	1.23	27.22	1.58	33.99	2.02	30.38	1.81	31.63	1.81	34.87	1.69
Salaries & Wages	9.32	0.92	68.78	4.27	80.52	4.28	111.12	6.01	107.50	6.17	109.95	6.38	160.66	9.56	154.88	9.23	152.74	8.76	152.89	7.39
Personnel Expense	**70.54**	**6.95**	**81.13**	**5.04**	**93.15**	**4.95**	**125.78**	**6.80**	**128.96**	**7.40**	**137.17**	**7.96**	**194.65**	**11.58**	**185.26**	**11.04**	**184.37**	**10.57**	**187.76**	**9.08**
Interest & Bank Com	27.49	2.71	24.61	1.53	26.44	1.41	25.05	1.35	28.52	1.64	40.29	2.34	48.11	2.86	20.29	1.21	14.16	0.81	12.92	0.62
Financial Expenses	27.49	2.71	**24.61**	**1.53**	**26.44**	**1.41**	**25.05**	**1.35**	**28.52**	**1.64**	**40.29**	**2.34**	**48.11**	**2.86**	**20.29**	**1.21**	**14.16**	**0.81**	**12.92**	**0.62**
Grand Total Expen	**262.85**	**25.88**	**313.25**	**19.43**	**363.53**	**19.35**	**384.06**	**20.77**	**388.82**	**22.31**	**378.58**	**21.95**	**453.72**	**26.97**	**409.64**	**24.42**	**429.57**	**24.62**	**422.71**	**20.43**
Profit Before Tax	30.36	3.00	**17.05**	**1.05**	**4.56**	**0.24**	**1.60**	**0.09**	**19.28**	**1.10**	**3.93**	**0.24**	**-52.99**	**-3.13**	**-8.18**	**-0.50**	**18.17**	**1.06**	**8.37**	**0.40**
Less:-Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Donation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
= Profit After Tax	**30.36**	**3.00**	**17.05**	**1.05**	**4.56**	**0.24**	**1.60**	**0.09**	**19.28**	**1.10**	**3.93**	**0.24**	**-52.99**	**-3.13**	**-8.18**	**-0.50**	**18.17**	**1.06**	**8.37**	**0.40**

Source: *Computed from Published Annual Reports of Dudh Dhara Dairy*

The common size income statement (P & L A/c) of the Bharuch District Co-operative Milk Producers' Union Ltd. has been presented in table 3.6 from 1993-94 to 2002-03.Table 3.6 portrays that the total sales value was increased during the study period. The highest sales was of Rs.2069.42 lacs in the year 2002-03 and the lowest sales was of Rs.1015.28 lacs in the year 1993-94.

It can be remarked from the table 3.6 that the cost of milk procurement registered a mixed trend during the period under study. The cost of milk procurement was always more than 71.55 percent of the total sales during the period under study. It was the highest in the year 1995-96 when it was 80.65 percent and was the lowest in the year 1993-1994 it was 71.56 percent of sales. However, the absolute figures always increase during the study period. It was Rs.1015.28 lakhs in 1993-94 which went up to Rs.2069.42 lakhs in 2002-03.

The gross profit registered mixed trend during the period under study. It ranged between 19.35 percent in 1995-96 and 28.44 percent in 1993-94 of the sales. The processing expenses registered mixed trend and ranged between 5.12 percent to 8.20 percent during the study period. The processing expenses registered mixed trend during the period under study. The marketing expenses ranged from 2.67 percent to 6.68 percent during the period under study. It showed decreasing trend during the study period which affect the positive result of the unit. It was always more than 2.66 percent of sales during the study period. The administrative expenses consists of stationary, audit, and insurance premium. It varied from 1.06 percent to 1.71 percent of sales during the period under study. It showed mixed trend during the period under study. The personnel expenses ranged between 4.95 percent in 1995-96 to 11.58 percent in 1999-00 of sales and showed a fluctuating trend during the period under study. The financial expenses include interest paid for loan borrowed and bank commission. It ranged between 0.62 percent in 2002-03 to 2.86 percent in 1999-00 of sales during the period under study. It contributed a very little share in the total expenditure during the period under study. The miscellaneous income in the unit mainly consists of income from bank interest, dividend and interest on non trading investment, profit on sale of assets etc. The miscellaneous income contributed a very little share towards the profit during the period under study. It ranged between 0.13 percent in 1994-95 to 0.72 percent in 2002-03 of sales during the study period. The net profit after tax ranged

between -3.13 percent in 1999-00 to 3.00 percent in 1993-94 of sales during the study period. It was the highest in the year 1993-94 when it was 3.00 percent of sales. The profit and loss accounts of the study period represents that the unit has incurred losses only in two years, i.e. 1999-00 and 2000-01 due to higher personnel and financial expenditure.

However, the performance of the unit was appreciable during 1993-94 as it made profit of Rs.30.36 lacs. The profit after the taxes is normal during the study period expect two year of losses.

Table 3.7
Abridged & Common Size Income Statement of RAJKOT District Co-Operative Milk Producers's Union Ltd.
From 1993-94 to 2002-03

(Rupees In Lacs)

Particulars	1993-94		1994-95		1995-96		1996-97		1997-98		1998-99		1999-00		2000-01		2001-02		2002-03	
	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%
Sales	1026.31	100.00	1268.24	100.00	1497.17	100.00	1746.85	100.00	2165.56	100.00	2685.76	100.00	3728.34	100.00	4582.75	100.00	5062.39	100.00	6780.63	100.00
Opening stock	68.11		99.27		74.32		93.43		107.18		116.33		156.94		161.00		173.18		239.66	
Add:-Purchases	784.07		897.04		1052.15		1257.41		1609.10		2120.39		2936.70		3782.83		4212.57		5858.65	
Less:-Closing stock	99.27		74.32		93.43		107.18		116.33		156.94		161.00		173.18		239.66		243.38	
Procurement Cost	**752.91**	**73.36**	**921.99**	**72.70**	**1033.04**	**69.00**	**1243.66**	**71.19**	**1599.95**	**73.88**	**2079.78**	**77.44**	**2932.64**	**78.66**	**3770.65**	**82.28**	**4146.09**	**81.90**	**5854.93**	**86.35**
=Gross Profit	**273.40**	26.64	346.25	27.30	464.13	31.00	503.19	28.81	565.61	26.12	605.98	22.56	795.70	21.34	812.10	17.72	916.30	18.10	925.70	13.65
Add:-Miscellaneous Inc.	26.21	2.55	20.20	1.59	23.48	1.57	18.02	1.03	20.27	0.94	18.61	0.69	22.50	0.60	32.86	0.72	28.49	0.56	74.62	1.10
Total Income	**299.61**	**29.19**	**366.45**	**28.89**	**487.61**	**32.57**	**521.21**	**29.84**	**585.88**	**27.06**	**624.59**	**23.25**	**818.20**	**21.94**	**844.96**	**18.44**	**944.79**	**18.66**	**1000.32**	**14.75**
Exices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rents,Rates& Taxes	8.16	0.80	6.96	0.55	9.93	0.66	11.33	0.65	6.55	0.30	6.58	0.24	8.77	0.24	4.67	0.10	12.24	0.24	5.82	0.09
General exp.	8.04	0.78	8.89	0.70	7.97	0.53	11.28	0.65	15.23	0.70	16.34	0.61	23.61	0.63	15.19	0.33	18.01	0.36	20.67	0.30
Insurance Premium	1.22	0.12	1.47	0.12	1.26	0.08	2.13	0.12	2.19	0.10	1.88	0.07	1.93	0.05	1.93	0.04	1.99	0.04	2.26	0.03
Repairs & Maintance	17.91	1.75	13.60	1.07	18.05	1.21	20.96	1.20	23.83	1.10	26.55	0.99	23.15	0.62	22.87	0.50	28.10	0.56	36.97	0.55
Depreaciation	10.42	1.02	11.19	0.88	16.28	1.09	21.19	1.21	21.17	0.98	20.34	0.76	21.02	0.56	21.34	0.47	23.06	0.46	24.17	0.36
Reasearch & Extention	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Processing Exp.	7.18	0.70	6.95	0.55	7.49	0.50	7.54	0.43	7.42	0.34	7.80	0.29	9.69	0.26	32.71	0.71	46.01	0.91	55.89	0.82
Power & fuel	62.45	6.08	54.53	4.30	66.02	4.41	72.11	4.13	82.69	3.82	89.41	3.33	117.25	3.14	135.57	2.96	139.60	2.76	174.36	2.57
Processing Exp.	**115.38**	**11.25**	**103.59**	**8.17**	**127.00**	**8.48**	**146.54**	**8.39**	**159.08**	**7.34**	**168.90**	**6.29**	**205.42**	**5.50**	**234.28**	**5.11**	**269.01**	**5.33**	**320.14**	**4.72**
Freight & Forwarding	11.08	1.08	2.06	0.16	2.89	0.19	2.79	0.16	3.47	0.16	2.59	0.10	3.96	0.11	1.77	0.04	0.01	0.00	0.00	0.00
Marketing exp.	18.22	1.78	28.25	2.23	33.18	2.22	42.58	2.44	29.17	1.35	24.36	0.91	24.68	0.66	27.89	0.61	15.79	0.31	67.15	0.99
Packaging exp.	30.05	2.93	29.42	2.32	42.84	2.86	51.43	2.94	62.56	2.89	77.96	2.90	108.61	2.91	105.19	2.30	117.84	2.33	116.14	1.71
Marketing Expenses	**59.35**	**5.79**	**59.73**	**4.71**	**78.91**	**5.27**	**96.80**	**5.54**	**95.20**	**4.40**	**104.91**	**3.91**	**137.25**	**3.68**	**134.85**	**2.95**	**133.64**	**2.64**	**183.29**	**2.70**
Co-operative Developme	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24	0.05	13.66	0.27	11.69	0.17
Post-Telegram	3.73	0.36	3.67	0.29	4.67	0.31	4.90	0.28	4.15	0.19	4.49	0.17	5.29	0.14	6.90	0.15	8.33	0.16	8.06	0.12
Audit exp.	7.86	0.77	8.27	0.65	9.67	0.65	10.30	0.59	14.36	0.66	23.70	0.88	15.73	0.42	15.77	0.34	17.65	0.35	18.45	0.27
Administrative Expens	**11.59**	**1.13**	**11.94**	**0.94**	**14.34**	**0.96**	**15.20**	**0.87**	**18.51**	**0.85**	**28.19**	**1.05**	**21.02**	**0.56**	**24.91**	**0.54**	**39.64**	**0.78**	**38.20**	**0.56**
Staff PF & Gratutiy	23.22	2.26	22.94	1.81	26.23	1.75	31.77	1.82	35.61	1.64	46.54	1.73	76.35	2.05	68.07	1.49	67.92	1.34	60.35	0.89
Salaries & Wages	129.62	12.63	138.17	10.89	163.19	10.90	178.86	10.24	207.48	9.58	244.20	9.09	279.36	7.49	307.99	6.72	311.13	6.15	317.63	4.68
Personnel Expenses	**152.84**	**14.89**	**161.11**	**12.70**	**189.42**	**12.65**	**210.63**	**12.06**	**243.09**	**11.22**	**290.74**	**10.82**	**355.71**	**9.54**	**376.06**	**8.21**	**379.05**	**7.49**	**377.98**	**5.57**
Interest & Bank Comm.	23.15	2.26	33.08	2.61	38.42	2.57	44.30	2.54	53.48	2.47	60.92	2.27	65.00	1.74	72.47	1.58	64.56	1.28	51.16	0.75
Financial Expenses	**23.15**	**2.26**	**33.08**	**2.61**	**38.42**	**2.57**	**44.30**	**2.54**	**53.48**	**2.47**	**60.92**	**2.27**	**65.00**	**1.74**	**72.47**	**1.58**	**64.56**	**1.28**	**51.16**	**0.75**
Grand Total Expenditu	**362.31**	**35.32**	**369.45**	**29.13**	**448.09**	**29.93**	**513.47**	**29.40**	**569.36**	**26.28**	**653.66**	**24.34**	**784.40**	**21.02**	**842.57**	**18.39**	**885.90**	**17.52**	**970.77**	**14.30**
Profit Before Tax	-62.70	-6.13	**-3.00**	**-0.24**	**39.52**	**2.64**	**7.74**	**0.44**	**16.52**	**0.78**	**-29.07**	**-1.09**	**33.80**	**0.92**	**2.39**	**0.05**	**58.89**	**1.14**	**29.55**	**0.45**
Less:-Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.10
Donation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.50	0.05
= Profit After Tax	**-62.70**	**-6.13**	**-3.00**	**-0.24**	**39.52**	**2.64**	**7.74**	**0.44**	**16.52**	**0.78**	**-29.07**	**-1.09**	**33.80**	**0.92**	**2.39**	**0.05**	**58.89**	**1.14**	**19.55**	**0.30**

Source: *Computed from Published Annual Reports of Gopal Dairy*

The common size income statement (P & L A/c) of the Rajkot District Co-operative Milk Producers' Union Ltd. has been presented in table 3.7 from 1993-94 to 2002-03.

It can be remarked from the table 3.7 that the cost of milk procurement registered a mixed trend during the period under study. The cost of milk procurement was always more than 68.99 percent of the total sales during the period under study. It was the highest in the year 2002-03 when it was 86.35 percent and was the lowest in the year 1995-1996 when it was 69.00 percent of sales. It showed a decreasing trend till 1995-96 and then showed an increasing trend throughout the study period except the year 2001-02. However, the absolute figures always increase during the study period. It was Rs.1026.31 lakhs in 1993-94 which went up to Rs.6780.63 lakhs in 2002-03.

The gross profit registered mixed trend during the period under study. It ranged between 13.65 percent in 2002-03 and 31.00 percent in 1995-96 of the sales. The processing expenses ranged between 4.72 percent in 2002-03 to 11.25 percent in 1993-94 during the period under study. The processing expenses registered decreasing trend during the period under study. The marketing expenses ranged between 2.64 percent in 2001-02 to 5.79 percent in 1993-94 and showed a decreased trend during the period under study. It was always more than 2.63 percent of sales during the study period. The administrative expenses varied from 0.54 percent to 1.13 percent of sales during the period under study. The personnel expenses include salaries and wages, provident fund and gratuity paid to employees. It showed decreasing trend during the period under study. It ranged from 5.57 percent to 14.89 percent of sales. The financial expenses include interest paid for loan borrowed and bank commission. It ranged between 0.75 percent in 2002-03 to 2.26 percent in 1993-94 of sales during the period under study. It decreased year after year during the study period. It contributed a very little share to the total expenditure during the period under study. The miscellaneous income of the unit mainly consists of income from bank interest, dividend and interest on non trading investment, profit on sale of assets etc. The miscellaneous income contributed a very little share towards the profit during the period under study. It ranged between 0.56 percent in 2001-02 to 2.55 percent in 1993-94 of sales during the study period. It ranged from -6.13 percent to 2.64 percent of sales during the study period.

The net profit after tax was the highest in the year 1995-96 which was 2.64 percent of sales. The profit and loss accounts of unit under study represents losses during three years, i.e. 1993-94, 1994-95 and 1998-99 due to higher personnel and financial expenditure.

However, the performance of the unit was appreciable during 1995-96 as it made Rs.39.52 lacks of profit. is good during the period under study. The profit after the taxes is normal during the study period expect three years of losses.

Table 3.8
Abridged & Common Size Income Statement of BARODA District Co-Operative Milk Producers's Union Ltd.
From 1993-94 to 2002-03

(Rupees In Lacs)

Particulars	1993-94		1994-95		1995-96		1996-97		1997-98		1998-99		1999-00		2000-01		2001-02		2002-03	
	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	Css	Rs.	%	Rs.	%
Sales	8049.76	100.00	9239.10	100.00	10704.65	100.00	12792.85	100.00	13684.63	100.00	15591.87	100.00	17593.66	100.00	19292.79	100.00	20340.18	100.00	23000.40	100.00
Opening stock	127.03		109.46		224.54		406.45		218.26		318.02		154.65		218.42		310.86		252.54	
Add:-Purchases	5932.79		7113.43		8487.53		9700.74		10533.12		11611.42		13538.87		14607.48		15606.37		18013.67	
Less:-Closing stock	109.46		224.54		406.45		218.26		318.02		154.65		218.42		310.86		252.54		454.43	
Procurement Cost	**5950.36**	**73.92**	**6998.35**	**75.75**	**8305.62**	**77.59**	**9888.93**	**77.30**	**10433.36**	**76.24**	**11774.79**	**75.52**	**13475.10**	**76.59**	**14515.04**	**75.24**	**15664.69**	**77.01**	**17811.78**	**77.44**
=Gross Profit	**2099.40**	26.08	2240.75	24.25	2399.03	22.41	2903.92	22.70	3251.27	23.76	3817.08	24.48	4118.56	23.41	4777.75	24.76	4675.49	22.99	5188.62	22.56
Add:-Miscellaneous Inc.	44.57	0.55	53.60	0.58	49.72	0.46	62.15	0.49	58.59	0.43	72.62	0.47	85.99	0.49	124.96	0.65	129.98	0.64	137.21	0.60
Total Income	**2143.97**	**26.63**	**2294.35**	**24.83**	**2448.75**	**22.87**	**2966.07**	**23.19**	**3309.86**	**24.19**	**3889.70**	**24.95**	**4204.55**	**23.90**	**4902.71**	**25.41**	**4805.47**	**23.63**	**5325.83**	**23.16**
Exices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rents,Rates& Taxes	6.72	0.08	5.17	0.06	7.73	0.07	7.81	0.06	15.13	0.11	15.85	0.10	9.79	0.06	13.68	0.07	12.73	0.06	17.76	0.08
General exp.	21.47	0.27	19.35	0.21	19.68	0.18	24.57	0.19	36.69	0.27	38.20	0.24	35.36	0.20	57.97	0.30	65.85	0.32	69.92	0.30
Insurance Premium	9.03	0.11	10.22	0.11	12.87	0.12	13.83	0.11	11.53	0.08	16.87	0.11	11.17	0.06	14.70	0.08	11.93	0.06	13.98	0.06
Repairs & Maintance	106.63	1.32	124.20	1.34	124.11	1.16	132.68	1.04	132.16	0.97	167.53	1.07	198.56	1.13	241.73	1.25	209.28	1.03	251.97	1.10
Depreaciation	146.01	1.81	143.26	1.55	133.41	1.25	132.32	1.03	146.32	1.07	267.60	1.72	274.31	1.56	278.47	1.44	229.43	1.13	262.75	1.14
Reasearch & Extention	66.30	0.82	82.28	0.89	77.41	0.72	84.90	0.66	100.43	0.73	133.82	0.86	146.25	0.83	188.35	0.98	207.06	1.02	178.82	0.78
Processing Exp.	32.44	0.40	40.77	0.44	35.86	0.33	45.41	0.35	30.11	0.22	34.75	0.22	26.61	0.15	33.26	0.17	36.42	0.18	53.17	0.23
Power & fuel	222.88	2.77	247.71	2.68	260.96	2.44	368.74	2.88	420.91	3.08	535.29	3.43	588.39	3.34	670.60	3.48	658.94	3.24	723.61	3.15
Processing Exp.	**611.48**	**7.58**	**672.96**	**7.28**	**672.03**	**6.27**	**810.26**	**6.32**	**893.28**	**6.53**	**1209.91**	**7.75**	**1290.44**	**7.33**	**1498.76**	**7.77**	**1431.64**	**7.04**	**1571.98**	**6.84**
Freight & Forwarding	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marketing exp.	230.61	2.86	241.91	2.62	263.31	2.46	345.34	2.70	359.79	2.63	390.10	2.50	421.87	2.40	440.86	2.29	248.09	1.22	259.21	1.13
Packaging exp.	468.60	5.82	497.08	5.38	611.08	5.71	764.07	5.97	803.80	5.87	815.35	5.23	844.79	4.80	977.92	5.07	1003.69	4.93	1259.34	5.48
Marketing Expenses	**699.21**	**8.68**	**738.99**	**8.00**	**874.39**	**8.17**	**1109.41**	**8.67**	**1163.59**	**8.50**	**1205.45**	**7.73**	**1266.66**	**7.20**	**1418.78**	**7.36**	**1251.78**	**6.15**	**1518.55**	**6.61**
Co-operative Developme	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Post-Telegram	18.09	0.22	19.69	0.21	17.93	0.17	28.08	0.22	25.84	0.19	39.76	0.26	30.56	0.17	31.11	0.16	30.28	0.15	37.82	0.16
Audit exp.	16.34	0.20	18.04	0.20	23.00	0.21	24.00	0.19	31.62	0.23	47.86	0.31	42.41	0.24	44.50	0.23	45.10	0.22	44.83	0.19
Administrative Expens	**34.43**	**0.42**	**37.73**	**0.41**	**40.93**	**0.38**	**52.08**	**0.41**	**57.46**	**0.42**	**87.62**	**0.57**	**72.97**	**0.41**	**75.61**	**0.39**	**75.38**	**0.37**	**82.65**	**0.35**
Staff PF & Gratutiy	114.92	1.43	137.94	1.49	130.16	1.22	164.07	1.28	174.67	1.28	213.54	1.37	232.22	1.32	328.01	1.70	345.39	1.70	399.86	1.74
Salaries & Wages	537.46	6.68	603.24	6.53	663.40	6.20	724.70	5.66	838.52	6.13	968.53	6.21	1093.28	6.21	1290.48	6.69	1332.42	6.55	1504.99	6.54
Personnel Expenses	**652.38**	**8.11**	**741.18**	**8.02**	**793.56**	**7.42**	**888.77**	**6.94**	**1013.19**	**7.41**	**1182.07**	**7.58**	**1325.50**	**7.53**	**1618.49**	**8.39**	**1677.81**	**8.25**	**1904.85**	**8.28**
Interest & Bank Comm.	84.81	1.05	83.64	0.91	56.16	0.52	93.67	0.73	159.75	1.17	174.33	1.12	208.57	1.19	228.87	1.19	279.30	1.37	149.87	0.65
Financial Expenses	**84.81**	**1.05**	**83.64**	**0.91**	**56.16**	**0.52**	**93.67**	**0.73**	**159.75**	**1.17**	**174.33**	**1.12**	**208.57**	**1.19**	**228.87**	**1.19**	**279.30**	**1.37**	**149.87**	**0.65**
Grand Total Expenditu	**2082.31**	**25.84**	**2274.50**	**24.62**	**2437.07**	**22.76**	**2954.19**	**23.07**	**3287.27**	**24.03**	**3859.38**	**24.75**	**4164.14**	**23.66**	**4840.51**	**25.10**	**4715.91**	**23.18**	**5227.90**	**22.73**
Profit Before Tax	61.66	0.79	**19.85**	**0.21**	**11.68**	**0.11**	**11.88**	**0.12**	**22.59**	**0.16**	**30.32**	**0.20**	**40.41**	**0.24**	**62.20**	**0.31**	**89.56**	**0.45**	**97.93**	**0.43**
Less:-Tax	35.00	0.43	10.00	0.11	0.00	0.00	0.00	0.00	8.40	0.06	10.00	0.06	15.00	0.09	30.00	0.16	50.00	0.25	55.00	0.24
Donation	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
= Profit After Tax	**26.66**	**0.36**	**9.75**	**0.10**	**11.68**	**0.11**	**11.88**	**0.12**	**14.19**	**0.10**	**20.32**	**0.14**	**25.41**	**0.15**	**32.20**	**0.15**	**39.56**	**0.20**	**42.93**	**0.19**

Source: *Computed from Published Annual Reports of Baroda Dairy*

The common size income statement (P & L A/c) of the Baroda District Co-operative Milk Producers' Union Ltd. has been presented in table 3.8 from 1993-94 to 2002-03.

It appears from the table 3.8 that the total sales value increased during the study period. The highest sales was of Rs.23340.18 lakh in the year 2001-02 and the lowest sales was of Rs.8049.76 lacs in the year 1993-94.

It can be remarked from the table 3.8 that the cost of milk procurement registered a mixed trend during the period under study. The cost of milk procurement was always more than 73.91 percent of the total sales during the period under study. It was the highest in the year 1995-96 when it was 77.59 percent and was the lowest in the year 1993-1994 when it was 73.92 percent of sales. However, the absolute figures always increase during the study period. It was Rs.8049.76 lakh in 1993-94 which went up to Rs.23340.18 lakh in 2001-02.

The gross profit registered mixed trend during the period under study. It ranged between 22.41 percent in 1995-96 and 26.08 percent in 1993-94 of the sales. The processing expenses ranged between 6.27 percent to 7.77 percent during the period under study. The processing expenses registered mixed trend during the period under study. The marketing expenses ranged between 6.15 percent to 8.68 percent during the period under study. It showed mixed trend during the study period. It was always more than 6.14 percent of sales during the study period. The administrative expenses varied from 0.35 percent to 0.57 percent of sales during the period under study. It decreased during the period under study. The personnel expenses include salaries and wages, provident fund and gratuity paid to employees. It showed mixed trend during the period under study. It ranged between 6.94 percent to 8.39 percent of sales during the period under study. The financial expenses ranged between 0.52 percent to 1.37 percent of sales during the period under study. It contributed a very little share in the total expenditure during the period under study. The unit provided taxation except the year 1995-96 and 1996-97. The miscellaneous income of the unit mainly consists of income from bank interest, dividend and interest on non trading investment etc. The miscellaneous income contributed a very little share towards the profit during the period under study. It ranged between 0.43 percent to 0.65 percent of sales during the study period. The profit after taxes

ranged between 0.10 percent to 0.36 percent of sales during the study period. It was the highest in the year 1993-94 which was 0.36 percent of sales.

However, the performance of the unit is appreciable during the period under study. The profit after the taxes is normal during the study period.

Table 3.9
Abridged & Common Size Income Statement of KHAIRA District Co-Operative Milk Producers's Union Ltd.
From 1993-94 to 2002-03

(Rupees In Lacs)

Particulars	1993-94		1994-95		1995-96		1996-97		1997-98		1998-99		1999-00		2000-01		2001-02		2002-03	
	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%	Rs.	%
Sales	32890.72	100.00	34449.43	100.00	38026.32	100.00	40010.22	100.00	41735.34	100.00	46234.63	100.00	48714.09	100.00	50919.13	100.00	46878.07	100.00	48833.67	100.00
Opening stock	3535.62		3507.83		1878.62		2251.83		5658.99		4683.53		2720.75		4822.94		5880.95		6124.40	
Add:-Purchases	24007.93		24134.12		29507.78		32471.03		29524.6		32206.75		38116.04		39430.58		36631.91		37651.73	
Less:-Closing stock	3507.83		1878.62		2251.83		5658.99		4683.53		2720.75		4822.94		5880.95		6124.4		5594.50	
Procurement Cost	**24035.72**	**73.08**	**25763.33**	**74.79**	**29134.57**	**76.62**	**29063.87**	**72.64**	**30500.06**	**73.08**	**34169.53**	**73.90**	**36013.85**	**73.93**	**38372.57**	**75.36**	**36388.46**	**77.62**	**38181.63**	**78.19**
=Gross Profit	**8855.00**	26.92	8686.10	25.21	8891.75	23.38	10946.35	27.36	11235.28	26.92	12065.10	26.10	12700.24	26.07	12546.56	24.64	10489.61	22.38	10652.04	21.81
Add:-Miscellaneous I	96.48	0.29	406.19	1.18	583.87	1.54	399.52	1.00	434.19	1.04	906.67	1.96	1119.64	2.30	1089.15	2.14	854.81	1.82	929.00	1.90
Total Income	**8951.48**	**27.21**	**9092.29**	**26.39**	**9475.62**	**24.92**	**11345.87**	**28.36**	**11669.47**	**27.96**	**12971.77**	**28.06**	**13819.88**	**28.37**	**13635.71**	**26.78**	**11344.42**	**24.20**	**11581.04**	**23.71**
Exices	407.07	1.24	502.61	1.46	398.21	1.05	389.96	0.97	314.17	0.75	468.87	1.01	324.54	0.67	431.02	0.85	432.59	0.92	430.65	0.88
Rents,Rates& Taxes	5.02	0.02	5.40	0.02	4.27	0.01	4.64	0.01	4.49	0.01	7.22	0.02	8.64	0.02	6.29	0.01	7.83	0.02	7.85	0.02
General exp.	19.24	0.06	27.05	0.08	15.84	0.04	18.56	0.05	20.97	0.05	27.37	0.06	29.4	0.06	26.88	0.05	22.24	0.05	32.10	0.07
Insurance Premium	12.45	0.04	13.71	0.04	12.79	0.03	10.69	0.03	12.45	0.03	18.48	0.04	19.76	0.04	19.31	0.04	18.12	0.04	20.12	0.04
Repairs & Maintance	259.80	0.79	338.80	0.98	232.95	0.61	241.47	0.60	248.04	0.59	264.06	0.57	351.62	0.72	379.36	0.75	337.27	0.72	341.75	0.70
Depreaciation	384.74	1.17	705.89	2.05	645.73	1.70	1146.09	2.86	822.3	1.97	1514.79	3.28	1382.83	2.84	1377.64	2.71	1349.38	2.88	1336.59	2.74
Reasearch & Extentic	318.19	0.97	244.64	0.71	524.98	1.38	443.17	1.11	448.71	1.08	699.94	1.51	559.41	1.15	520.42	1.02	350.71	0.75	418.71	0.86
Processing Exp.	793.82	2.41	693.95	2.01	678.27	1.78	810.35	2.03	739.16	1.77	768.23	1.66	817.34	1.68	752.41	1.48	124.73	0.27	139.79	0.29
Power & fuel	990.81	3.01	934.24	2.71	1040.41	2.74	1509.87	3.77	1949.67	4.67	2110.52	4.56	2568.95	5.27	2953.47	5.80	2339.91	4.99	2318.33	4.75
Processing Exp.	**3191.14**	**9.71**	**3466.29**	**10.06**	**3553**	**9.34**	**4574.80**	**11.43**	**4559.96**	**10.92**	**5879.48**	**12.71**	**6062.49**	**12.45**	**6466.80**	**12.71**	**4982.78**	**10.64**	**5045.89**	**10.35**
Freight & Forwarding	75.80	0.23	71.65	0.21	75.5	0.20	101.66	0.25	125.83	0.30	134.43	0.29	161.05	0.33	181.75	0.36	163.11	0.35	224.94	0.46
Marketing exp.	54.33	0.17	64.71	0.19	52.48	0.14	90.22	0.23	26.93	0.06	29.71	0.06	32.05	0.07	31.95	0.06	25.96	0.06	30.45	0.06
Packaging exp.	4003.53	12.17	3572.33	10.37	3592.61	9.45	4022.17	10.05	3554.08	8.52	3167.07	6.85	3796.40	7.79	3376.60	6.63	2695.23	5.75	3021.22	6.19
Marketing Expense	**4133.66**	**12.57**	**3708.69**	**10.77**	**3720.59**	**9.79**	**4214.05**	**10.53**	**3706.84**	**8.88**	**3331.21**	**7.20**	**3989.50**	**8.19**	**3590.30**	**7.05**	**2884.30**	**6.16**	**3276.61**	**6.71**
Co-operative Develop	0.00	0.00	0.00	0.00	0	0.00	0	0.00	10.37	0.02	0	0.00	8.16	0.02	0	0.00	0	0.00	0.14	0.00
Post-Telegram	17.58	0.05	15.46	0.04	19.04	0.05	26.03	0.07	22.24	0.05	21.36	0.05	22.94	0.05	22.04	0.04	26.40	0.06	26.17	0.05
Audit exp.	24.93	0.08	25.71	0.07	40	0.11	35.74	0.09	46.33	0.11	64.73	0.14	68.64	0.14	68.88	0.14	64.25	0.14	59.50	0.12
Administrative Exp	**42.51**	**0.13**	**41.17**	**0.11**	**59.04**	**0.16**	**61.77**	**0.16**	**78.94**	**0.18**	**86.09**	**0.19**	**99.74**	**0.21**	**90.92**	**0.18**	**90.65**	**0.20**	**85.81**	**0.17**
Staff PF & Gratutiy	178.87	0.54	188.84	0.55	317.36	0.83	267.49	0.67	265.51	0.64	310.1	0.67	352.99	0.72	288.36	0.57	269.7	0.58	267.54	0.55
Salaries & Wages	775.71	2.36	911.11	2.64	924.08	2.43	1012.51	2.53	1011.4	2.42	1255.24	2.71	1188.08	2.44	1150.24	2.26	1325.28	2.83	1260.15	2.58
Personnel Expense	**954.58**	**2.90**	**1099.95**	**3.19**	**1241.44**	**3.26**	**1280.00**	**3.20**	**1276.91**	**3.06**	**1565.34**	**3.38**	**1541.07**	**3.16**	**1438.60**	**2.83**	**1594.98**	**3.41**	**1527.69**	**3.13**
Interest & Bank Com	558.16	1.70	695.11	2.02	801.01	2.11	1095.02	2.74	1946.07	4.66	2006.97	4.34	2005.79	4.12	1916.08	3.76	1645.97	3.51	1445.95	2.96
Financial Expenses	**558.16**	**1.70**	**695.11**	**2.02**	**801.01**	**2.11**	**1095.02**	**2.74**	**1946.07**	**4.66**	**2006.97**	**4.34**	**2005.79**	**4.12**	**1916.08**	**3.76**	**1645.97**	**3.51**	**1445.95**	**2.96**
Grand Total Expen	**8880.05**	**27.01**	**9011.21**	**26.15**	**9375.53**	**24.66**	**11225.64**	**28.06**	**11568.72**	**27.70**	**12869.09**	**27.82**	**13698.59**	**28.13**	**13502.70**	**26.53**	**11198.68**	**23.92**	**11381.95**	**23.32**
Profit Before Tax	71.43	**0.20**	81.08	**0.24**	**100.09**	**0.26**	**120.23**	**0.30**	**100.75**	**0.26**	**102.68**	**0.24**	**121.29**	**0.24**	**133.01**	**0.25**	**145.74**	**0.28**	**199.09**	**0.39**
Less:-Tax	31.50	0.10	30.00	0.09	40.00	0.11	50.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bad Debt Re& Sil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.00	0.04	4.67	0.01	0.00	0.00	2.88	0.01
= Profit After Tax	**39.93**	**0.10**	**51.08**	**0.15**	**60.09**	**0.15**	**70.23**	**0.17**	**100.75**	**0.26**	**102.68**	**0.24**	**103.29**	**0.20**	**128.34**	**0.24**	**145.74**	**0.28**	**196.21**	**0.38**

Source: *Computed from Published Annual Reports of Amul Dairy*

The common size income statement (P & L A/c) of the Khaira District Co-operative Milk Producers' Union Ltd. has been presented in table 3.9 from 1993-94 to 2002-03. It can be seen from table 3.9 that the total sales value was increased during the study period. The highest sales was Rs.48833.67 lacs in the year 2002-03 and the lowest sales was Rs.32890.72 lacs in the year 1993-94. The analysis reveals the proportion of each component to the total sales in each year is made through the common size income statement.

It can be remarked from the table 3.9 that the cost of milk procurement registered an increasing trend during the period under study. The cost of milk procurement was always more then 73 percent of the total sales during the period under study. It was the highest in the year 2002-03 when it was 78.19 percent and was the lowest in the year 1993-94 when it was 73.08 percent of sales. However, the absolute figures always increase during the study period. It was Rs.24035.72 lakhs in 1993-94 which went up to Rs.38181.63 lakhs in 2002-03.

The gross profit registered mixed trend during the period under study. It ranged between 21.81 percent in 2002-03 and 27.36 percent in 1996-97. The processing expenses take the second largest portion after the first three years during the study period. It ranged from 9.71 percent to 12.71 percent during the period under study. The processing expenses registered mixed trend during the period under study. The marketing expenses share the first largest portion in the total share during first three years of study period than it takes place second. It ranged from 6.16 percent to 12.57 percent during the period under study. It showed decreasing trend during the last four years. It was always more than 6.15 percent of sales during the study period. The administrative expenses consist of stationary, audit fees, and insurance premium, etc. It shares the least part in the total cost. It varied from 0.11 percent to 0.21 percent of sales during the period under study. It showed mixed trend during the period under study. The personnel expenses include salaries and wages, provident fund and gratuity paid to employees. It showed mixed trend during the period under study. It ranged from 2.90 percent in 1993-94 to 3.41 percent in 2001-02 of sales during the period under study. The financial expenses include interest paid for loan borrowed and bank commission. It ranged from 1.70 percent in 1993-94 to 4.66 percent in 1997-98 of sales during the period under study. It

contributed a very little share in the total expenditure during the period under study. The miscellaneous income in the unit mainly consists of income from bank interest, dividend and interest on non trading investment etc. The miscellaneous income contributed a very little share towards the profit during the period under study. It ranged from 0.29 percent in 1993-94 to 2.30 percent in 1999-00 of sales during the study period. The profit before tax ranged from 0.20 percent to 0.39 percent of sales during the study period. The unit provided taxation from 1993-94 to 1996-97 during the study period. The unit provided donation of Rs. 18 lacs during 1999-00 and bad debt reserve during 2000-01. It also provided investment reserve for price fluctuation of Rs. 2.88 lacs during 2002-03.

However, the performance of the unit is appreciable during the period under study. The profit after the taxes is normal during the study period.

Table 3.10

Common Size Income Statement of Average of all Unit Under study of 10 years From 1993-94 to 2002-03

Particulars	Sabar	Mehsana	Banas	Sumul	Vasudhara	Bharuch	Gopal	Baroda	Amul	Average
	%	%	%	%	%	%	%	%	%	%
Sales	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
Procurement Cost	77.85	81.30	78.60	85.48	81.85	77.44	76.68	76.26	74.92	78.93
=Gross Profit	22.15	**18.70**	**21.40**	**14.52**	**18.15**	**22.56**	**23.32**	**23.74**	**25.08**	**21.07**
Add:-Miscellaneous Inc.	**0.96**	0.48	0.45	0.82	**0.56**	0.41	1.14	0.54	1.52	0.76
Total Income	23.11	**19.18**	21.86	**15.34**	18.71	**22.97**	**24.46**	**24.28**	**26.60**	**21.83**
Processing Exp.	8.88	6.27	10.32	5.95	7.82	6.34	7.06	7.07	11.03	7.86
Marketing Expenses	9.06	8.70	6.56	4.65	5.18	5.10	4.16	7.71	8.79	6.66
Administrative Expenses	0.24	0.22	0.19	0.26	0.62	1.39	0.82	0.41	0.17	0.48
Personnel Expenses	3.08	2.50	2.51	3.54	4.16	8.14	10.52	7.79	3.15	5.04
Financial Expenses	1.17	1.12	1.86	0.82	1.14	1.65	2.01	0.99	3.19	1.55
Grand Total Expenditure	**22.42**	**18.81**	**21.43**	**15.22**	**18.92**	**22.61**	**24.56**	**23.97**	**26.33**	**21.59**
Profit Before Tax	**0.69**	**0.37**	0.42	**0.12**	-0.21	**0.36**	**-0.10**	**0.30**	**0.27**	**0.25**
Less:-Tax	0.00	0.04	0.13	0.05	0.03	0.00	0.01	0.14	0.04	0.05
Donation	0.00	0.02	0.01	0.02	0.03	0.00	0.01	0.00	0.01	0.01
= Profit After Tax	**0.69**	**0.31**	**0.29**	**0.06**	**-0.28**	**0.36**	**-0.12**	**0.16**	**0.22**	**0.19**

Source: *Computed from Published Annual Reports of Units Under Study*

Figure 3.1
Histogram showing Average Procurement Expenses of Units Under Study

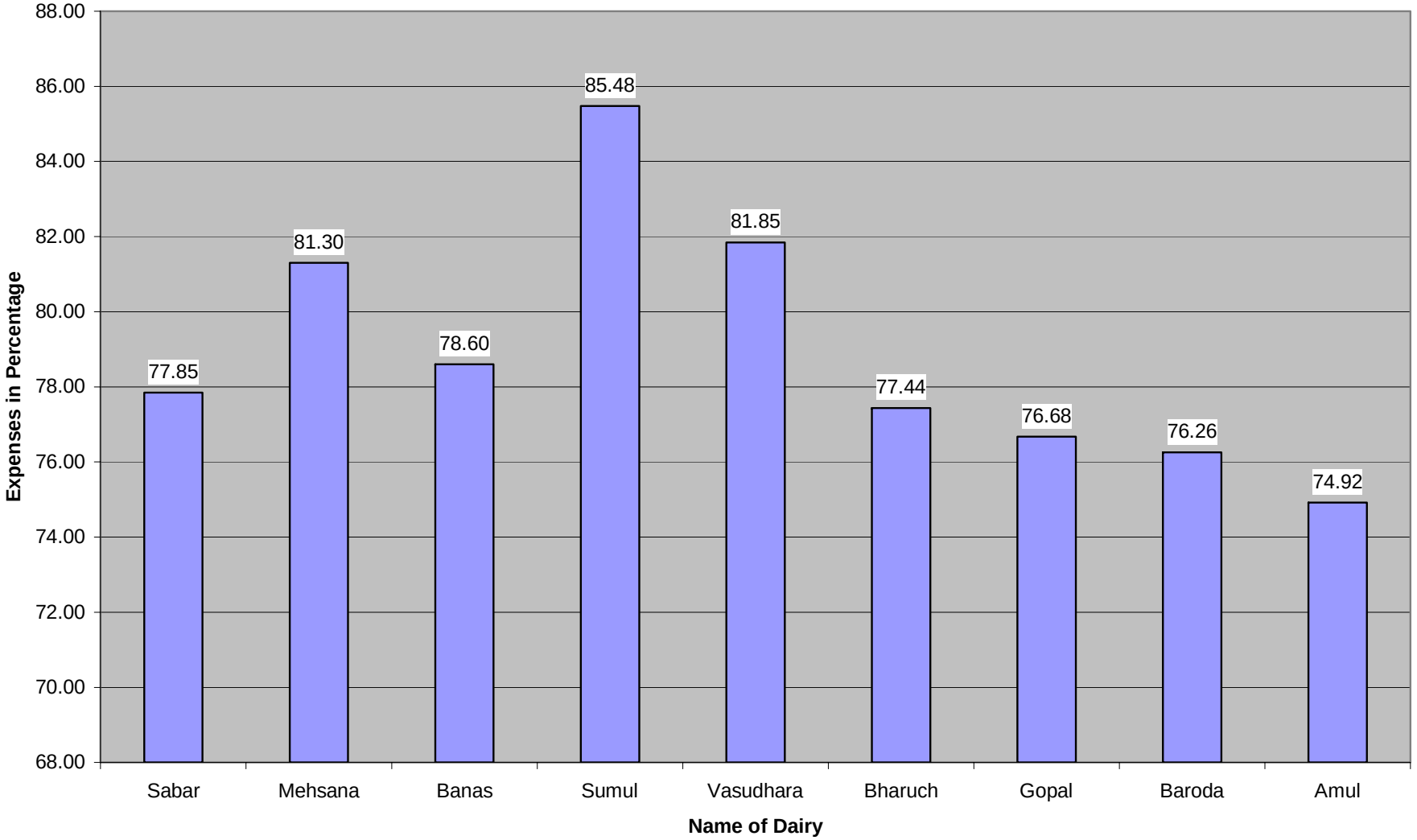


Figure 3.2
Histogram showing Average processing Expenses of Units Under Study

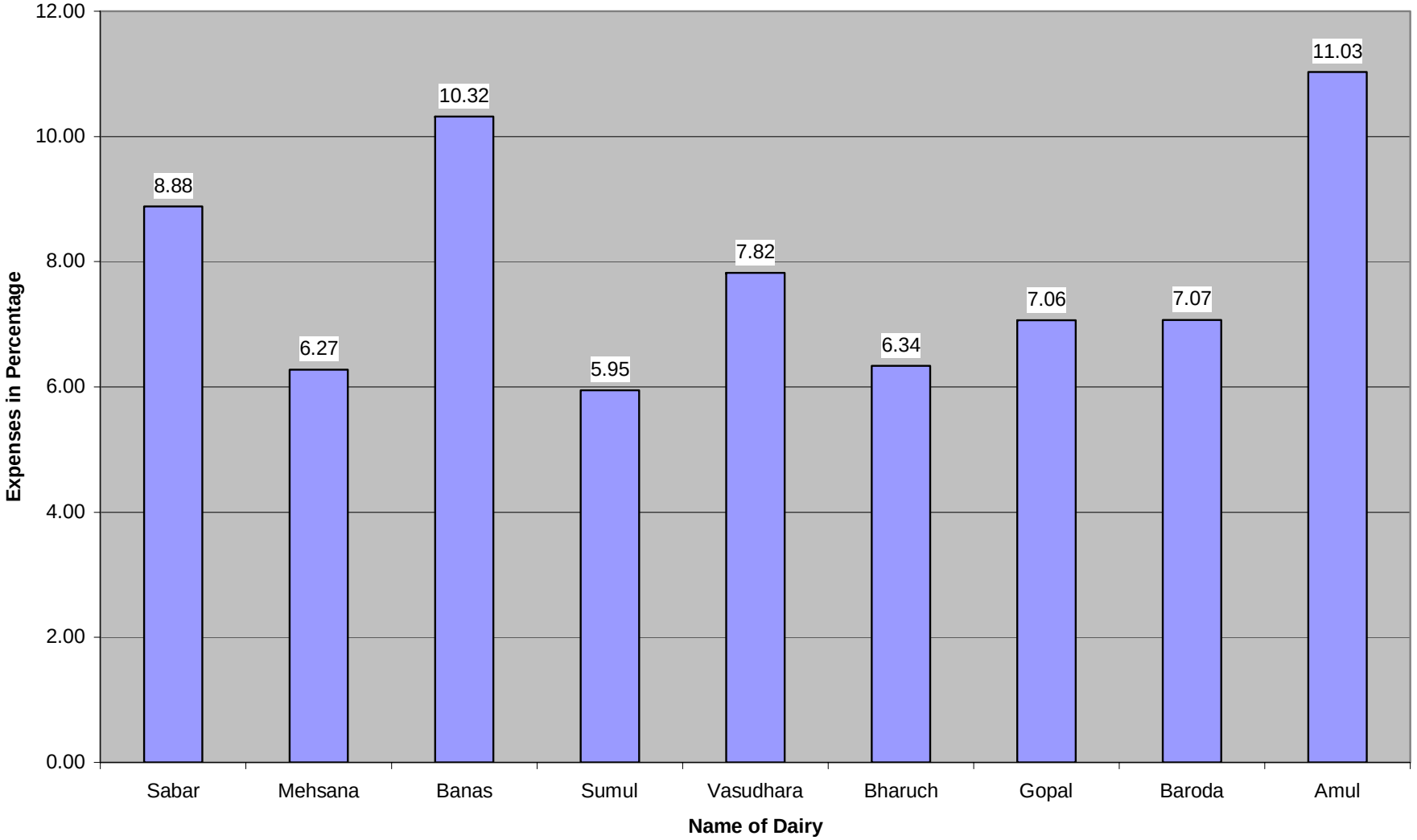


Figure 3.3
Histogram Showing Average Marketing Expenses of Units Under Study

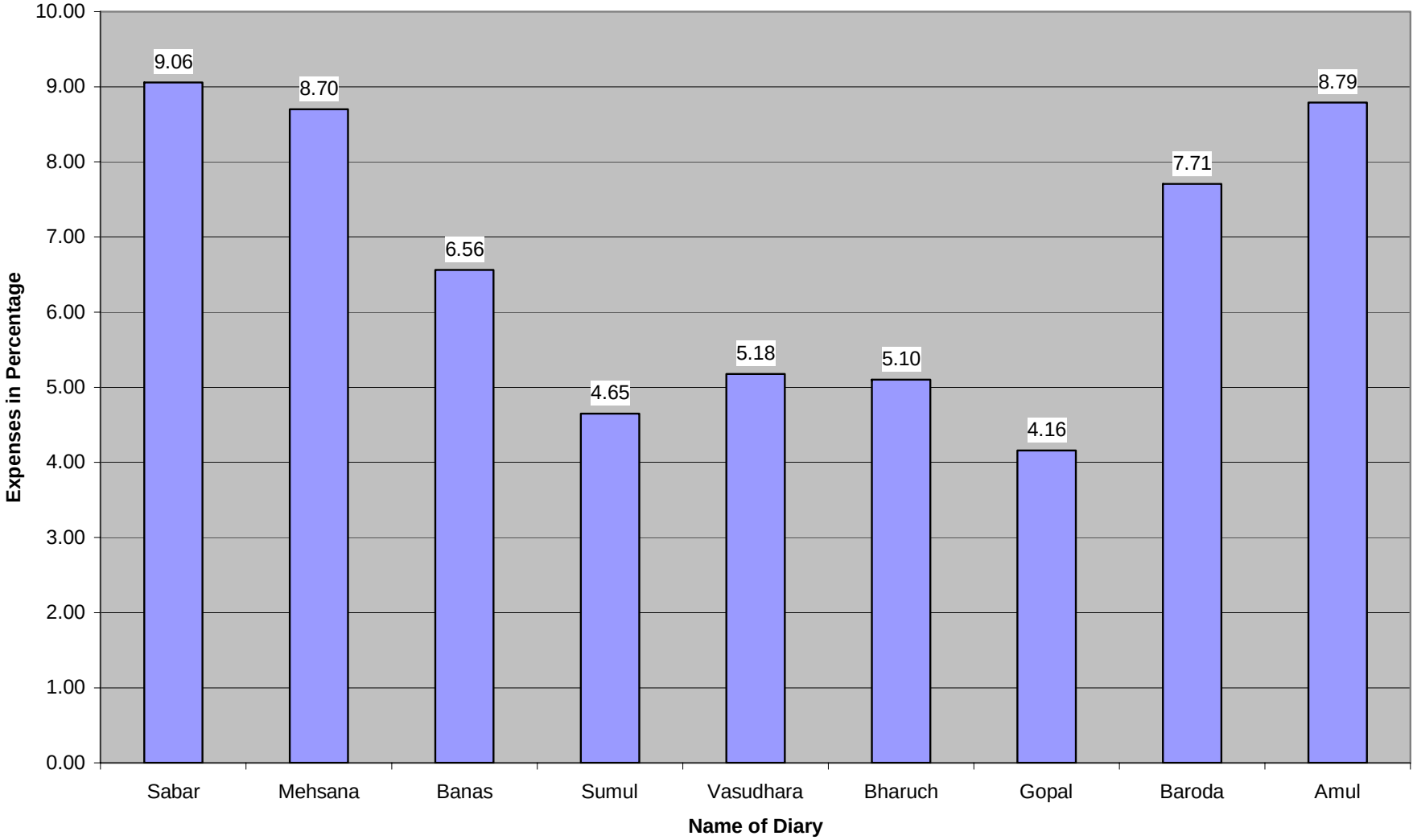


Figure 3.4
Histogram Showing Average Administrativel Expenses of Units Under Study

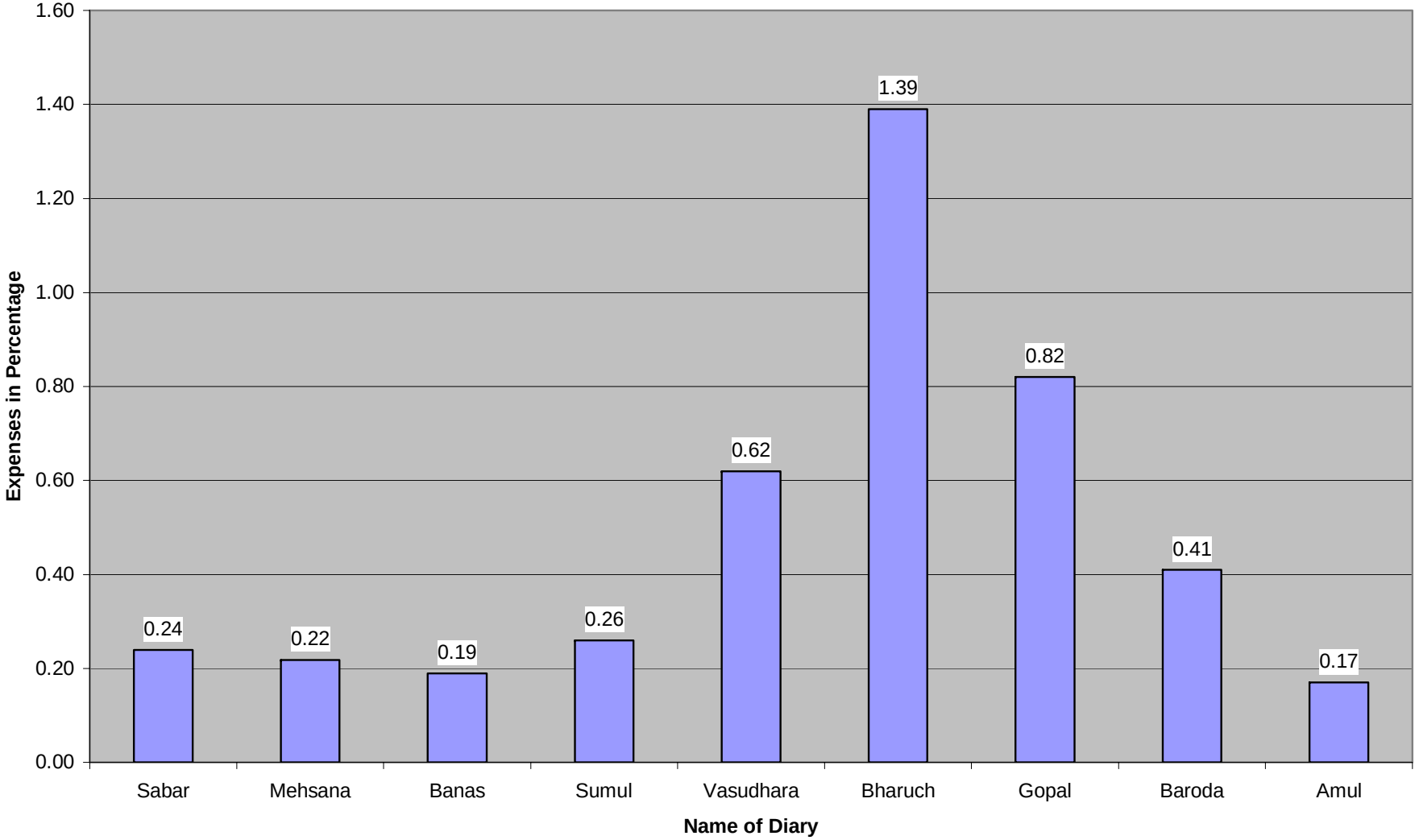


Figure 3.5
Histogram Showing Average Personnel Expenses of Units Under Study

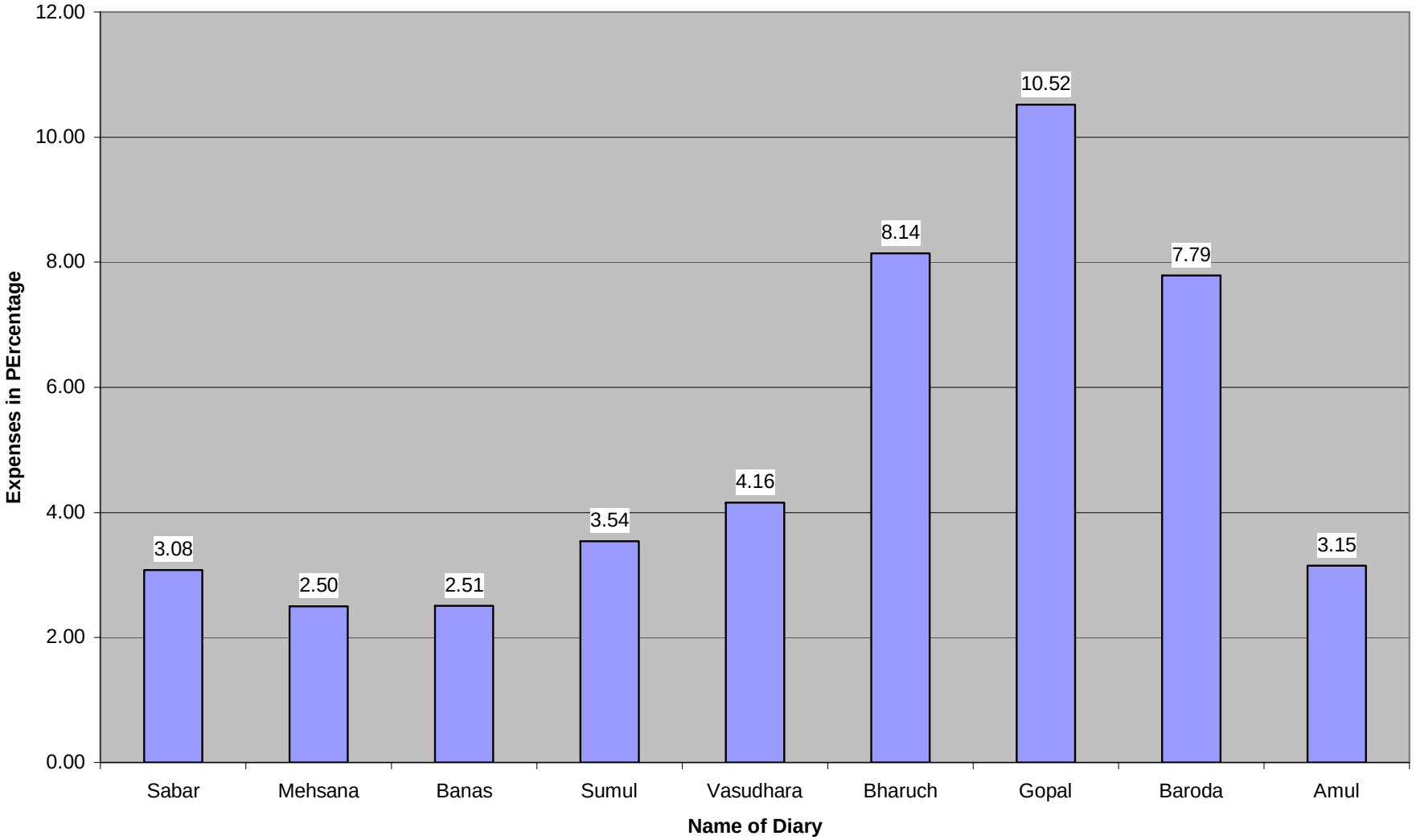


Figure 3.6
Histogram Showing Average Financial Expenses of Units Under Study

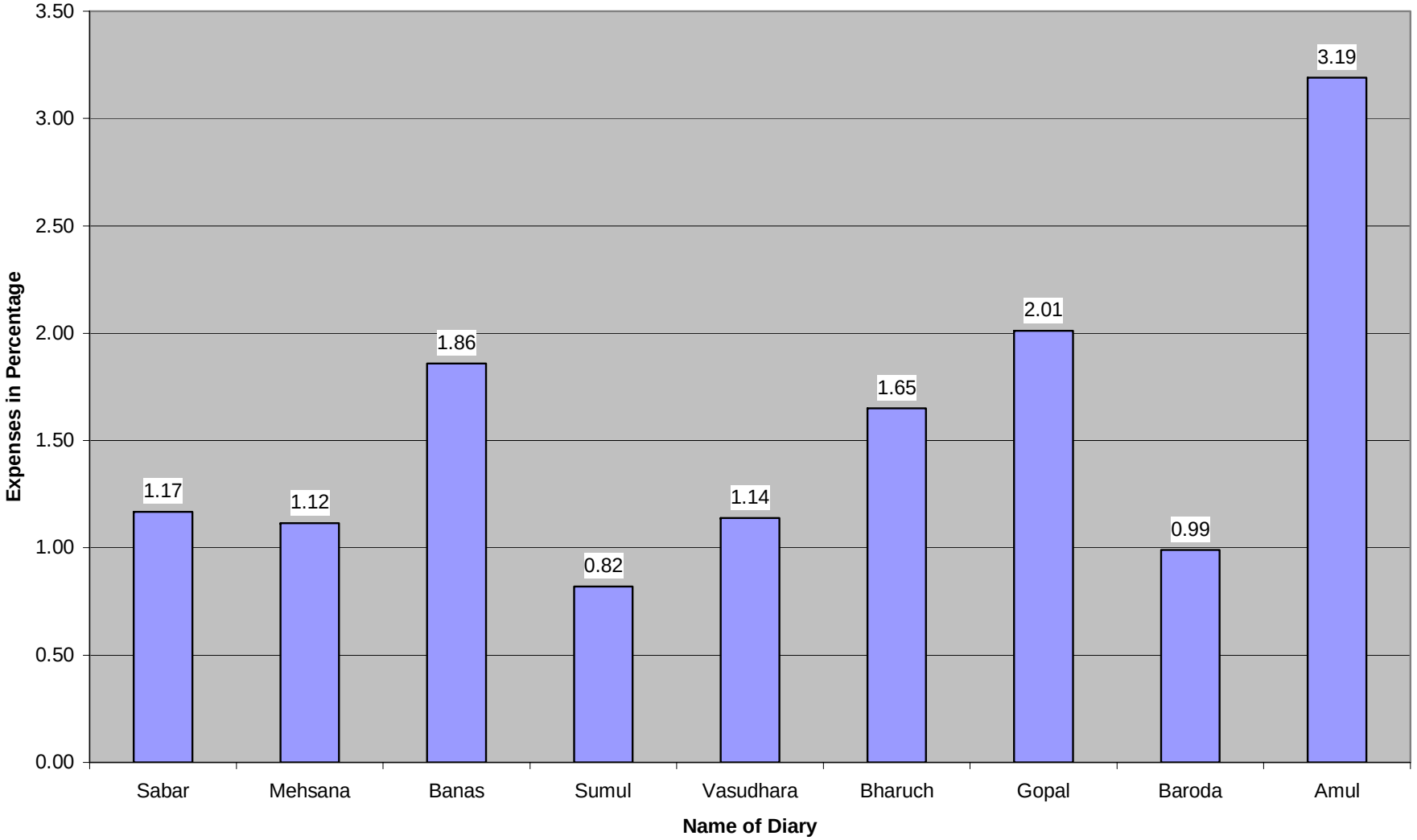
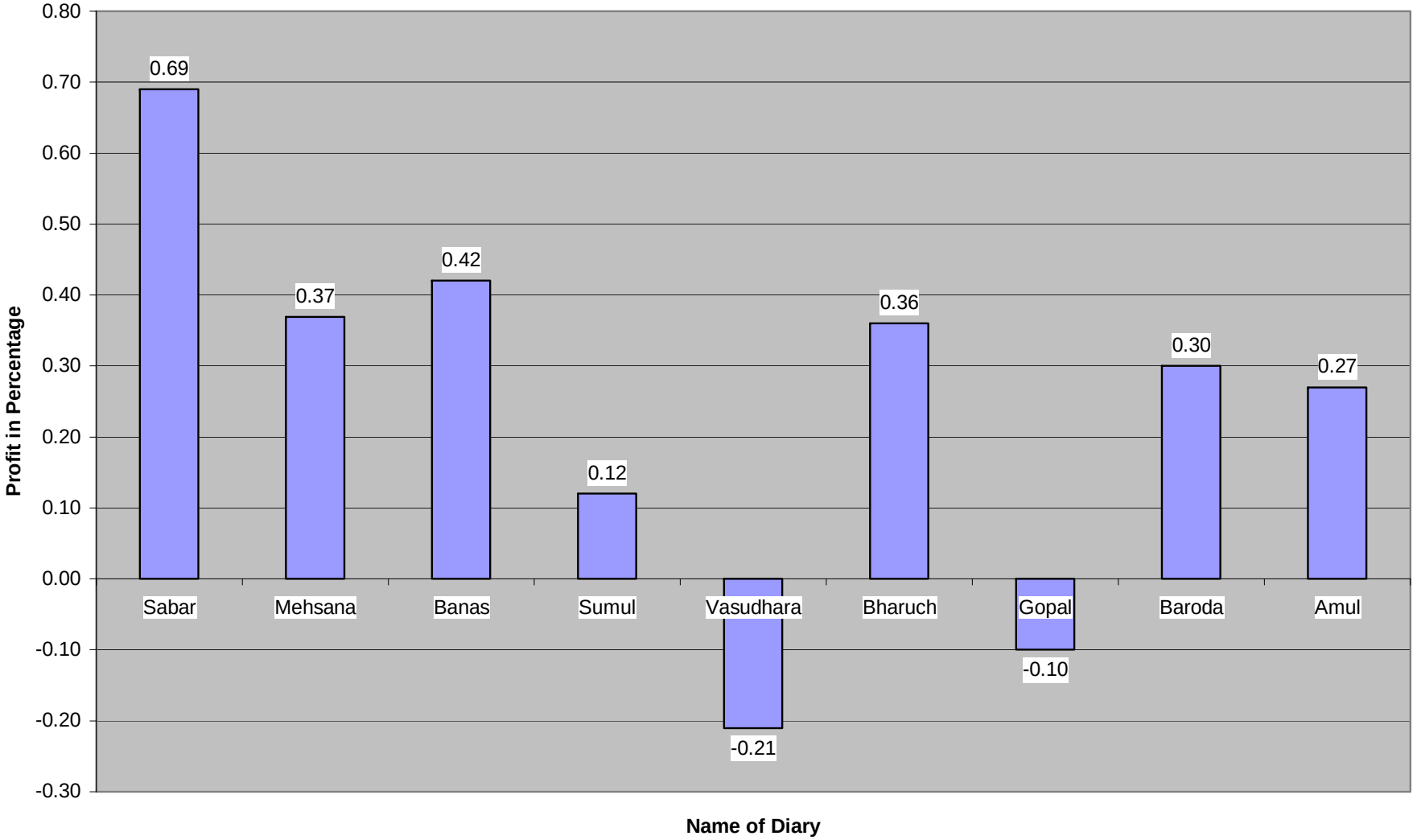


Figure 3.7
Histogram Showing Average Profit before Tax of Units Under Study



4. Inter firm Comparison and Findings of Common Size Statement :

The comparison of the Common Size Income Statement of various co-operative dairy units under study makes it evident that the sales in **Dudh-sagar** was the highest in followed by **Amul, Banas, Sagar** and **Sumul**. The percentage of the average of the of procurement cost to sales in **Sumul, Vasudhara, Dudh-sagar, Banas** and **Sabar** were 85.48%, 81.85%, 81.30%, 78.60% and 77.85% respectively. Throughout the study period the cost of procurement was the highest of 86.35 percent of sales in **Gopal** dairy during 2002-03 because of the higher payment of milk per liter to the milk producers and transportation expenses as compared to other units. Regarding the consolidated average of nine units, the cost of procurement ranged from 74.83% in 1993-94 to 81.28% in 2002-03 showed increasing trend during the study period except 1996-97. it was due to heavy competition and existence of private dairy day by day and higher transportation expenses due to rise the prices of petroleum products.

In **Gopal** dairy the percentage of miscellaneous income was the highest of 2.55 percent in 1993-94. This was because of larger amount received as interest and dividends on investments.

The processing expenses takes share the second largest portion in the total coat of sales of the dairy unit. It was the highest in **Amul** dairy of 12.71 percent in 2000-01 as compared to other units. It was due to higher excise and power & fuel expenses as compared to the previous year. The consolidated ratio of processing expenses of **Amul** is the highest of 11.03 percent of sales and In **Banas** it was the 10.32 percent of sales while it was always less than 10 percent of sales in the other dairy units under study.

The marketing expenses take the third place in total cost of the sales of the dairy units. The average share was declined year after year during the period under study.

The personnel expenses share the third largest proportion in the total cost of sales. It was the highest of 12.70 percent of sales in 1994-95 in **Gopal** and the lowest in **Dudh-sagar** of 1.98 percent in 1997-98. **Dudh-sagar** and **Banas dairy** were paid lower amount of in form of salary and wages to employees during the period under study. The **Gopal** dairy paid the higher

amount to employees in the form of salaries and wages throughout the study period.

The amount paid to financiers in the form of interest was the highest in **Amul** throughout the study period in comparison to other dairy units. The percentage to the sales ranged between 1.70 percent in 1993-94 and 4.66 percent in 1997-98 in **Amul** dairy during the study period. While it was always less than 3 percent of the sales in other dairy units except **Banas** under study during all the years.

The percentage of administrative expenses was the highest in **Dudh-dhara** which was 1.60 percent in 1994-95. However, the percentage of administrative expenses always less than 1.0 percentage in all other dairy units under study except **Vasudhara** in 2001-02 and **Gopal** in 1998-99 dairy.

During the 1993-94 the **Vasudhara** dairy and **Gopal** dairy suffered losses. In **Vasudhara** dairy it was due to higher marketing expenses as compared to previous year. In **Gopal** dairy it was due to the processing and personnel expenses as compared to previous year. In 1994-95 **Gopal** dairy suffered losses due to high expenses of processing expenses and personnel expenses as compared to previous year. The personnel expenses were more than doubled to the previous year. In 1997-98 **Vasudhara** dairy was in losses due to high expenses of processing and marketing as compared to the previous year. In 1998-99 the **Gopal** dairy suffered again losses due to higher procurement cost as compared to the previous year. In 1999-00 and 2000-01 **Dudh-dhara** dairy was in losses due to higher processing, personnel and financial expenses as compared to previous year. In 2001-02 **Vasudhara** dairy suffered losses due to higher expenses of processing and financial as compared to the previous year.

On analysing the taxation front **Sabar**, **Dudh-dhara** did not spare any amount through out the study period for taxation while **Gopal** dairy also provided up to 1993-94 but than after provided a negligible amount of 0.01 percent of the sales. The **Amul** dairy provided taxes up to 1995-96.

As regard to the distribution of dividends **Sabar**, **Dudh-sagar**, **Banas**, **Sumul**, **Baroda** and **Amul** had paid regular dividend throughout the study period. **Vasudhara** did not pay dividend during 1993-94, 1997-98 and 2001-02

due to net losses. **Dudhdhara** did not pay dividend during 1999-00, 2000-01 due to net losses. **Gopal** dairy did not pay dividend during 1993-94, 1994-95 and 1998-99 because of net losses.

In 2002-03 all the dairy units were profitable position. It showed good indication of performance.

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CHAPTER - IV
VALUE ADDED STATEMENT

1. Introduction
2. Meanings and Definitions
    - 2.1 Value Added (VA)
    - 2.2 Gross Value Added (GVA)
    - 2.3 Net Value Added (NVA)
3. Value Added Statement (VAS)
4. Advantages of Value Added Statement
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8. Analysis of Value Added Statement of the Units Under Study
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CHAPTER - IV
VALUE ADDED STATEMENT

1. Introduction :

The concept of value added is considerably old. It was originated in the U.S. Treasury in the 18th century. But actually, the value added statement has come to be seen with greater frequency in Europe and more particularly in Britain. The main objective of the enterprise is to maximize the profit and wealth of the owners of the enterprise. The growing awareness of stakeholders, other than shareholders like, employees, creditors, consumers, financial institutions, government and the society have force the corporate bodies to play a crucial role in the socio-economic progress of economy. The published annual reports have established its great importance not only among the shareholders but also all other groups who take interest in the enterprise. So it has become necessary for the enterprise to provide all information relating to financial statements in its annual reports. The value added statement is one of the statements which require having its place in annual repots now-a-days.

2. **Meanings and Definitions:**

2.1 Value Added (VA) :

VA is the excess of sales revenue plus income from other sources over the cost of bought in goods and services purchased from outsiders.

" The increase in market value resulting from an alteration in the form, creation or availability of a product or services excluding the cost bought materials and services"[1].

"Value added is the value which entity has added in a period equals its sales less bought in goods and services"[2].

VA is the wealth that a firm creates by its own efforts. The value added performance of a company is a good measure of the over all productivity of the firm and it is out of the total amount of the value added that the firm rewarded all interested parties including shareholders, staff, inland revenue and others. VA is

a measure of wealth created by a firm wages, salaries, bonus etc. form a significant part of value added.

Value added is defined by CIMA thus

"Sales value less the cost of purchased materials and services. This represents the worth of an alteration in form, location or availability of a product or service"

The value added concept is a very familiar in economics. It is used to measure Gross National Product. There are number of approaches to compute the gross national product, and value added approach is one of them. Under this approach, GNP is computed by summing up the additional values created by all participating entities in the manufacturing sector.

Each entity in the processing sector is said to add value to the national product equal to the value of output produced by the entity minus the value of the intermediate product which has been purchased from other participating entities in the manufacturing sector. The value added by entity equals the payments has been made to the factors of production in the form of wages, rent, interest and profit. Payments made by the entity in respect of the goods and services purchased from other entity are excluded from the preview of value added computation. Wages, rent, interest and profit are thus the four components of value added, Thus as per the basic law of economics the value of all income equal to the value of all output. The value added concept has been long used in the field of economics, but now-a-days it is used in accounting statement. The main thrust of financial accounting development in the recent decades has been in the area of 'how' we measure income rather than 'whose' income are measure. The common belief of the traditional accountants, that the net income or profit is reward of the proprietors had been considered as a very narrow definition of income.

2.2 Gross Value Added (GVA) :

GVA is arrived at by deducting from sales revenue the cost of all materials and services which were brought in from outside suppliers.

2.3 Net Value Added (NVA) :

Net value added can be defined as gross value added less depreciation.

3. Value Added Statement (VAS) :

Value Added Statement reveals the value added by an enterprise which it has been able to generate and its distribution among those contributing to its generation are known as stakeholders.[1] Value Added Statement is voluntary corporate supplementary statement, which provides the information in such a manner as would easily be understood by a layman. VAS is no substitute but a supplement to the profit and loss account. VAS is based on items or figures obtained in the profit and loss account and the accounting concept remain the same in preparation of VAS. VAS shows how the wealth generated by a firm is shared among it employees, investors, lenders, Government and the future, i.e., retained earnings. The disclosure of VAS is significant from "social reporting" point of view. It has been considered as an important step towards social reporting. This statement depicts an account of value productivity at the micro-level business economics. The VAS shows the value created , added or generated and the distribution thereof the interested groups.

4. Advantages of Value Added Statement :

Value added statement is the indicator of corporate performance for shareholders and stakeholders who contribute in the process of addition of value to the product. The value added statements has several advantages which are as follows.

1. The Value Added Statement provides the information of the elements which are adding the value to the product.
2. The Value Added Statement is a good measure of the overall productivity of the firm and it is out of the value added that the firm rewards to all interested parties.
3. Capital and labour are the important factors of production and profitability of the business firm depends greatly on how efficiently and effectively it utilities these two factor of production. It makes easier for enterprise to introduce a productivity linked bonus scheme for employees. The employees may be given productivity bonus on the basis Value Added Statement.
4. Value Added based ratios are useful, diagnostic and predictive tools. Trends in value added ratios, comparisons with other companies, international com-

parison may be useful. Value Added ratio can be a great indicator to management in the matter of identifying the areas of its strengths and weaknesses and designing better system of planning and controlling the future operations.

5. Value added statement is a very good measure of the size and importance of enterprise.
6. Value added statement links an enterprise's financial accounts to national income. A company's value added indicates the contribution to national income.
7. Value added statement can be used by management in various ways. Management has to evaluate its own performance.
8. The social accountability of business firm can be shown through Value Added Statement which clearly shows the rewards that have been assigned to various parties like, shareholders, creditors, employees and money lenders.
9. The government can frame its various policies like wages policy, labour incentives scheme, labour laws, policy and tax structure etc.

5. Limitations of Value Added Statement :

Value added statement has several limitations and because of many academicians are not ready to put much reliance on such income as an index of business performance. The limitations of Value Added Statement are as under.

1. It is argued that the Value Added Statement shows the application of value added to several interest groups, like employees, government and shareholders etc., the risk associated with the firm is only born by the shareholders. In other words employees, government and outside financiers are only interested in getting their share on value added but when firm is in trouble, the entire risk associated their in borne only by shareholders. Therefore, the concept of showing value added as applied to several interested groups is being questioned by many academics.
2. It is shown as a supplementary statement of financial information. But in no case the value added statement substitute the traditional income statement(i.e. Profit and Loss accounts)

3. Value Added Statement is not standardized .One matter of non standardization is the inclusion or exclusion of depreciation in the calculation of value added.
4. Value Added Statement generally provides value creation and value application.
5. It does not recognize the special role that profit plays in the field of business.

6. Frame work of Value Added Statement :

A. Application of value added :

The value added statement shows the value added for a business for a particular period and how it is arrived at and apportioned to the following stakeholders.

The Workforce:

The labour and staff include all live factors who have rendered their services for production. The share awarded to them is turned here as "employments/ wage cost " which includes the payments made to them during a given period in the form of salaries, wages, bonus, allowances, contribution to gratuity, employee state insurance premium, welfare expenses and director's remuneration and fees etc.

The Government :

The central or state government and local authority provides most of the infrastructure facilities to business for their operations. The share of central, state or local authorities is known as government which generally, includes excise duty, cess, municipal taxes, sales tax, octroi, custom and income taxes etc. On the other hand government provides some incentives on exports or to promote business, such amounts allowed by government may be deducted from the share of government.

The financiers :

The providers of the capital which includes the shareholders and the financial institutions which provide the financial assistance in the form of long term loans and advances and debenture etc. The interest paid to them on loans and dividends for share capital are taken as a share of financiers.

The Business :

The balance of value added, if any is shown separately under retained earnings/ ploughed back to business which is in fact share of shareholder but not distributed among them.

7. Method of Preparing Value Added Statement :

The conventional value added statement is divided into two parts the first part shows how value added is arrived at and the second part shows the application of such value added. The value added statement represents the value added by the company during a specific time and the manner in which it is shared amongst the various factors, employees, government and providers of the capital. The following two methods are preparing the value added statement.

(1) The subtractive method (2) The additive method

1. The subtractive method :

Value added = Sales revenue – Bought in goods

Where sales revenue includes revenue collected from sale of goods and services while "bought in cost" includes brought in materials and services.

2. The additive method :

Value added = Profit before tax + Employee cost + Dividend+ Interest

Where employee cost includes salaries, wages and benefit given to workforce.

While the absolute value of net VA and its proportion to gross output are very important, the factor components of value addition reveal more information. It is generally found that value addition is highest for service companies and lowest for a trading business.

7.1 Some basic concepts :

The term 'turnover' means the gross sales of goods, duties and sales tax minus the amount of sales returns, goods used for self consumption, commission, rebates and discount allows etc.

The Cost of 'bought in materials' includes cost of procurement, transportation etc. The figure is further adjusted for the increase or decrease in

closing stocks of work-in-progress and finished goods compared to the opening stock.

The ‘cost of service’ means the amount paid for the service rendered by the various factors for processing like power & fuel, repair and maintains, rent paid, bank charges, insurance premium, postage, stationary, travelling etc. It is to be noted that the share of employees, depreciation, share of government are not included in the cost of services. Moreover some items which generally appear in the both side of profit and loss account of the business firm are also excluded while preparing value added statement which is as follows.

[a] Items which are debited in profit and loss account.

1. Provision for doubtful debts.
2. Loss on sale of assets and non trading investments
3. Prior period charges
4. Preliminary expenses written off
5. Donation, charities etc.
6. Miscellaneous expenses

[b] Items which are credited in profit and loss account.

1. Prior period income
2. Profit on sale of asset or non trading investments
3. Interest on deposit and securities
4. Income from sale of scrap
5. Dividend on trading investment

8. Analysis of Value Added Statement of the Units Under Study :

Table 4.1a
Generation of Value Added of Sabar Dairy from 1993-94 to 2002-03

Particular	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Sales	**14097.64**	99.28	**17469.80**	99.25	**21271.82**	**99.52**	**25893.72**	**99.49**	**29158.35**	**99.59**	**32735.5**	**98.66**	**37941.05**	**98.53**	**37134.01**	**98.66**	**34692.96**	**98.59**	**43309.41**	98.94
Add:Other Income	102.26	0.72	131.16	0.75	102.14	0.48	132.66	0.51	120.70	0.41	444.35	1.34	564.15	1.47	506.08	1.34	495.45	1.41	465.82	1.06
Total Income	**14199.90**	100.00	**17600.96**	100.00	**21373.96**	**100.00**	**26026.38**	**100.00**	**29279.05**	**100.00**	**33179.85**	**100.00**	**38505.20**	**100.00**	**37640.09**	**100.00**	**35188.41**	**100.00**	**43775.23**	100
Bought in of Materials & Services																				
* Materials (a)	9637.14	67.87	12702.05	72.17	16724.06	78.25	19962.33	76.70	23319.31	79.65	26280.62	79.21	30267.65	78.61	29551.70	78.51	27708.35	78.74	35606.55	81.34
* Services (b)	3594.21	25.31	3921.92	22.28	3594.57	16.82	4700.24	18.06	4530.69	15.47	4772.73	14.38	5601.88	14.55	5495.86	14.60	5419.86	15.40	5766.46	13.17
(a)+(b)	**13231.35**	93.18	**16623.97**	94.45	**20318.63**	**95.07**	**24662.57**	**94.76**	**27850.00**	**95.12**	**31053.35**	**93.59**	**35869.53**	**93.16**	**35047.56**	**93.11**	**33128.21**	**94.14**	**41373.01**	94.51
Gross Value Added A	**968.55**	6.82	**976.99**	**5.55**	**1055.33**	**4.93**	**1363.81**	**5.24**	**1429.05**	**4.88**	**2126.50**	**6.41**	**2635.67**	**6.84**	**2592.53**	**6.89**	**2060.20**	**5.86**	**2402.22**	5.49
Less: Depreaciation	194.33	1.37	186.62	1.06	187.66	0.88	204.60	0.79	193.62	0.66	428.99	1.29	401.31	1.04	345.67	0.92	330.62	0.94	355.31	0.81
Net Value Added	**774.22**	5.45	**790.37**	4.49	**867.67**	**4.05**	**1159.21**	**4.45**	**1235.43**	**4.22**	**1697.51**	**5.12**	**2234.36**	**5.80**	**2246.86**	**5.97**	**1729.58**	**4.92**	**2046.91**	4.68

Source: *Computed from Published Annual Reports of the Unit*

Table 4.1b
Application of Value Added of Sabar Dairy from 1993-94 to 2002-03

Particulars	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Employees	455.85	58.88	435.57	55.11	516.89	59.57	692.81	59.77	789.28	63.89	1100.57	64.83	1267.15	56.71	1272.28	56.62	1212.86	70.12	1583.34	77.35
Government	5.44	0.70	4.83	0.61	3.47	0.40	4.28	0.37	6.20	0.50	3.40	0.20	6.48	0.29	14.21	0.63	5.43	0.31	12.87	0.63
Financiares	275.65	35.60	302.37	38.26	298.54	34.41	402.99	34.76	315.20	25.51	276.67	16.30	313.48	14.03	307.28	13.68	288.33	16.67	266.21	13.01
Business Retained Profit	37.28	4.82	47.60	6.02	48.77	5.62	59.13	5.10	124.75	10.10	316.87	18.67	647.25	28.97	653.09	29.07	222.96	12.89	184.49	9.01
Total	**774.22**	100.00	**790.37**	100.00	**867.67**	100.00	**1159.21**	100.00	**1235.43**	100.00	**1697.51**	100.00	**2234.36**	100.00	**2246.86**	100.00	**1729.58**	100.00	**2046.91**	100.00

Source: *Computed from Published Annual Reports of the Unit*

The generation of value added and its application in Sabar Dairy during the period under study have been presented in table 4.1a. The table 4.1a shows the income from sales in the unit was always more than 98.52 percent during the study period and very little part was added through income from the service during the study period. The cost of bought in of materials and service in term of percentage was 93.18 percent in the year 1993-94 which increased up to 95.07 percent in 1995-96 than went down to 93.11 percent in 2000-01. It increased up to 94.51 percent in the year 2002-03. It came down to the lowest level 93.11 percent in 2000-01 and finally went up to 95.07 percent in 1995-96. Analyzing the cost of procurement and services separately, the cost of bought in of materials ranged between 67.87 percent in the year 1993-94 and 81.34 in the year 2002-03. Though it registered a up ward trend during first five years, decreased in next three years, than increased in the last two years. While the cost of bought in of materials fluctuated from 67.87 percent to 81.34 percent.

The cost of services fluctuated between 13.17 percent in 2002-03 to 25.31 percent in 1993-94. There was also declined trend during first two years, increased in the fourth and fifth year, again declined in next four years and again increased up to 15.40 percent in the year 2001-02 and finally went down to 13.17 percent in 2002-03.

The gross value added showed a fluctuating trend during the period under study but the absolute figures increased year after year except last three years during the period under study. The ratio of GVA to income from the sales and income from services ranged between 4.88 percent in 1997-98 to 6.84 percent in 1999-00.The percentage of depreciation in 1993-94 was 1.37 percent which decreased to 0.66 percent the lowest level in 1997-98, than increased up to 1.29 percent in 1998-99, but then after started declining year after year. It affects the reverse on NVA. The NVA ranged between 4.05 percent in 1995-96 to 5.97 percent in 2000-01. The highest NVA was 5.97 percent in 2000-01 and the lowest was 4.05 percent in 1995-96. However, the absolute figures of NVA increased year after year during the period under study.

Showing the application of net value added, table 4.1b reveals that the share provided to employment cost in term of absolute figures increased year after year during the period under study. The ratio of employees was the highest during the period under study. The share to employees was highest

77.35 percent in 2002-03 and the lowest 55.11 percent in 1994-95. It suggests that the employees are enjoying the major share of value added. The share of providers of capital has also increased significantly. As a result the retained profits of the unit significantly come down. The share paid to the government in the form of excise duty ranged between 0.20 percent in 1998-99 to 0.70 percent in 1993-94. It decreased during the first five years and than after increased trend during the study period. The share of government was more than 0.19 percent during the study period. The share made available to financial institutions in the form of absolute figure of interest increased steadily during the first five years except 1995-96 and decreased in sixth year than increased in seventh year, than decreased year after year during study period.

On the basis of the above analysis, it may be concluded that the **Sabar dairy** generated sufficient value added and could thus be considered as a healthy unit from this point of view. The largest share of value added has gone to the employees followed by financiers and government. Thus, it may be conclude that the management has succeeded in fulfilling to great extent, its responsibility towards the society at large.

Table 4.2a
Generation of Value Added of Dudh Sagar Dairy from 1993-94 to 2002-03

Particular	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Sales	**29163.13**	98.94	**34003.48**	99.40	**41001.97**	**99.59**	**45541.75**	**99.58**	**53771.39**	**99.73**	**65298.41**	**99.51**	**68672.47**	**99.43**	**65914.32**	**99.62**	**66577.01**	**99.67**	**74718.35**	99.78
Add:Other Income	313.50	1.06	204.63	0.60	167.47	0.41	191.21	0.42	145.17	0.27	318.37	0.49	396.74	0.57	254.49	0.38	218.94	0.33	164.58	0.22
Total Income	**29476.63**	100.00	**34208.11**	100.00	**41169.44**	**100.00**	**45732.96**	**100.00**	**53916.56**	**100.00**	**65616.78**	**100.00**	**69069.21**	**100.00**	**66168.81**	**100.00**	**66795.95**	**100.00**	**74882.93**	100
Bought in of Materials & Services																				
* Materials (a)	21787.22	73.91	26758.64	78.22	33493.93	81.36	36675.58	80.20	44457.52	82.46	55266.01	84.23	57290.40	82.95	53828.60	81.35	54330.91	81.34	62271.56	83.16
* Services (b)	6048.23	20.52	5781.62	16.90	6053.73	14.70	6959.74	15.22	6901.11	12.80	7613.92	11.60	8573.08	12.41	8351.52	12.62	8585.87	12.85	8360.42	11.16
(a)+(b)	**27835.45**	94.43	**32540.26**	95.12	**39547.66**	**96.06**	**43635.32**	**95.42**	**51358.63**	**95.26**	**62879.93**	**95.83**	**65863.48**	**95.36**	**62180.12**	**93.97**	**62916.78**	**94.19**	**70631.98**	94.32
Gross Value Added A-B	**1641.18**	5.57	**1667.85**	**4.88**	**1621.78**	**3.94**	**2097.64**	**4.58**	**2557.93**	**4.74**	**2736.85**	**4.17**	**3205.73**	**4.64**	**3988.69**	**6.03**	**3879.17**	**5.81**	**4250.95**	5.68
Less: Depreaciation	229.73	0.78	226.58	0.66	239.94	0.58	282.39	0.62	398.14	0.74	514.43	0.78	622.97	0.90	886.96	1.34	774.30	1.16	667.78	0.89
Net Value Added	**1411.45**	4.79	**1441.27**	4.22	**1381.84**	**3.36**	**1815.25**	**3.96**	**2159.79**	**4.00**	**2222.42**	**3.39**	**2582.76**	**3.74**	**3101.73**	**4.69**	**3104.87**	**4.65**	**3583.17**	4.79

Source: *Computed from Published Annual Reports of the Unit*

Table 4.2b
Application of Value Added of Dudh Sagar Dairy from 1993-94 to 2002-03

Particulars	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Employees	779.15	55.20	838.59	58.18	913.17	66.08	1061.62	58.48	1063.44	49.24	1248.31	56.17	1544.00	59.78	1843.34	59.43	2007.45	64.65	2511.53	70.09
Government	40.12	2.84	13.04	0.90	7.29	0.53	57.63	3.17	114.08	5.28	273.29	12.30	228.88	8.86	279.17	9.00	185.75	5.98	216.57	6.04
Financiares	522.40	37.01	467.55	32.44	388.32	28.10	598.85	32.99	869.79	40.27	500.41	22.52	511.41	19.80	583.79	18.82	603.26	19.43	588.68	16.43
Business Retained Profit	69.78	4.94	122.09	8.47	73.06	5.29	97.15	5.35	112.48	5.21	200.41	9.02	298.47	11.56	395.43	12.75	308.41	9.93	266.39	7.43
Total	**1411.45**	100.00	**1441.27**	100.00	**1381.84**	100.00	**1815.25**	100.00	**2159.79**	100.00	**2222.42**	100.00	**2582.76**	100.00	**3101.73**	**100.00**	3104.87	**100.00**	3583.17	**100.00**

Source: *Computed from Published Annual Reports of the Unit*

The generation of VA and its application in **Dudhsagar Dairy** during the period under study have been presented in table 4.2a. The table 4.2a shows the income from sales in the unit was always more than 98.93 percent during the study period and very little part was added through income from the service during the study period. The cost of bought in of materials and service in term of percentage was 94.43 percent in the year 1993-94 which increased up to 96.06 percent in 1995-96 than went down to 94.32 percent in 2002-03. The lowest level of percent was 94.32 percent in 2002-03 and the highest level was 95.83 percent in 1996-97. Analyzing the cost of bought in of materials and services separately, the cost of bought in of materials ranged between 73.91 percent in the year 1993-94 and 84.23 in the year 1998-99. Though it registered a up ward trend during first three years, decreased in next year, than increased in the last one year than decreasing trend. While the cost of bought in of materials fluctuated between 73.91 percent in the year 1993-94 to 84.23 percent in the year 1998-99.

The cost of services fluctuated between 11.16 percent in 2002-03 to 20.52 percent in 1993-94. There was also declined trend during first two years, increased in the fourth year, again declined in next two years and again increased up to 12.85 percent in the year 2001-02 and finally went down to 11.16 percent in 2002-03.

The gross value added showed a fluctuating trend during the period under study but the absolute figures increased year after year except 1995-96 during the period under study. The ratio of GVA to income from the sales and income from services ranged between 3.94 percent in 1995-96 to 6.03 percent in 2000-01.The percentage of depreciation in 1993-94 was 0.78 percent which decreased to 0.58 percent the lowest level in 1995-96, than increased up to 1.34 percent in 2000-01, but than after started declining year after year. It affects the adverse on NVA. The NVA ranged between 3.36 percent in 1995-96 to 4.79 percent in 2002-03 during the study period. The highest NVA was 4.79 percent in 2002-03 and the lowest was 3.36 percent in 1995-96. However, the absolute figures of NVA increased except 1995-96 year after year during the period under study.

Showing the application of net value added, table 4.2b reveals that the

share provided to employment cost in term of absolute figures increased year after year during the period under study. The ratio of employees was the highest during the period under study. The share to employees was highest 70.09 percent in 2002-03 and the lowest 49.24 percent in 1997-98. It suggests that although the employees are enjoying the major share of value added. The share of providers of capital has also increased significantly. As a result the retained profits of the unit significantly come down. The share paid to the government in the form of excise duty ranged between 0.90 percent in 1994-95 to 8.86 percent in 1999-00. The share of government remain fluctuated during the study period. The share of government was more than 0.89 percent during the study period. The share made available to financial institutions in the form of absolute figure of interest decreased during the first two years and than increased during the remaining period except 2002-03 during the study period.

On the basis of the above analysis, it may be concluded that the **Dudhsagar** dairy generated enough value added and could thus be considered as a healthy unit from this point of view. The largest share of value added has gone to the employees followed by financiers and government. Thus, it may be conclude that the management has succeeded in fulfilling to great extent, its responsibility towards the society at large.

Table 4.3a
Generation of Value Added of Bans Dairy from 1993-94 to 2002-03

Particular	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Sales	**7984.86**	99.51	**10762.57**	99.82	**17717.29**	**99.86**	**22330.74**	**99.91**	**25103.87**	**99.73**	**32739.77**	**99.4**	**34073.87**	**99.12**	**35549.50**	**99.26**	**37352.47**	**99.29**	**46036.20**	99.62
Add:Other Income	39.50	0.49	19.02	0.18	24.79	0.14	20.32	0.09	67.37	0.27	198.80	0.60	302.05	0.88	264.80	0.74	266.82	0.71	177.73	0.38
Total Income	**8024.36**	100.00	**10781.59**	100.00	**17742.08**	**100.00**	**22351.06**	**100.00**	**25171.24**	**100.00**	**32938.57**	**100.00**	**34375.92**	**100.00**	**35814.30**	**100.00**	**37619.29**	**100.00**	**46213.93**	100
Bought in of Materials & Services																				
* Materials (a)	5479.64	68.29	7823.13	72.56	14224.59	80.17	17994.40	80.51	20973.63	83.32	27832.09	84.50	28158.00	81.91	28269.00	78.93	27978.94	74.37	35973.70	77.84
* Services (b)	1985.64	24.75	2266.63	21.02	2610.04	14.71	3299.78	14.76	2975.62	11.82	3538.22	10.74	4455.44	12.96	4415.41	12.33	5151.05	13.69	5542.58	11.99
(a)+(b)	**7465.28**	93.04	**10089.76**	93.58	**16834.63**	**94.88**	**21294.18**	**95.27**	**23949.25**	**95.14**	**31370.31**	**95.24**	**32613.44**	**94.87**	**32684.41**	**91.26**	**33129.99**	**88.06**	**41516.28**	89.83
Gross Value Added A-B	**559.08**	6.96	**691.83**	**6.42**	**907.45**	**5.12**	**1056.88**	**4.73**	**1221.99**	**4.86**	**1568.26**	**4.76**	**1762.48**	**5.13**	**3129.89**	**8.74**	**4489.30**	**11.94**	**4697.65**	10.17
Less: Depreaciation	106.66	1.33	188.16	1.75	231.60	1.31	244.25	1.09	308.39	1.23	322.54	0.98	343.48	1.00	860.10	2.40	2091.23	5.56	2106.85	4.56
Net Value Added	**452.42**	5.63	**503.67**	4.67	**675.85**	**3.81**	**812.63**	**3.64**	**913.60**	**3.63**	**1245.72**	**3.78**	**1419.00**	**4.13**	**2269.79**	**6.34**	**2398.07**	**6.38**	**2590.80**	5.61

Source: *Computed from Published Annual Reports of the Unit*

Table 4.3b
Application of Value Added of Banas Dairy from 1993-94 to 2002-03

Particulars	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Employees	274.20	60.61	312.04	61.95	441.96	65.39	464.27	57.13	497.92	54.50	690.89	55.46	774.86	54.61	937.12	41.29	1031.76	43.02	1100.97	42.50
Government	15.25	3.37	17.05	3.39	18.00	2.66	24.00	2.95	36.00	3.94	77.15	6.19	97.27	6.85	0.00	0.00	0.00	0.00	0.00	0.00
Financiares	138.74	30.67	158.33	31.44	187.98	27.81	264.49	32.55	287.54	31.47	327.92	26.32	320.24	22.57	1326.58	58.45	1265.24	52.76	1353.48	52.24
Business Retained Profit	24.23	5.36	16.25	3.23	27.91	4.13	59.87	7.37	92.14	10.09	149.76	12.02	226.63	15.97	6.09	0.27	101.07	4.21	136.35	5.26
Total	**452.42**	100.00	**503.67**	100.00	**675.85**	100.00	**812.63**	100.00	**913.60**	100.00	**1245.72**	100.00	**1419.00**	100.00	**2269.79**	**100.00**	2398.07	**100.00**	2590.80	**100.00**

Source: *Computed from Published Annual Reports of the Unit*

The generation of value added and application of value added of **Banas** dairy have been given in table 4.3a and table 4.3b respectively.

The table 4.3a shows the income from sales in the unit was always more than 99.11 percent during the study period and very little part was added through income from the service during the study period. The cost of bought in of materials and services to the sales and other income ranged from 88.06 percent in 2001-02 to 95.27 percent in 1996-97. Analyzing the bought in of materials and services separately, the, the materials ranged from 68.29 percent in 1993-94 to 84.50 percent in 1998-99.It showed an increase up to 1998-99 as compared to 1993-94. It decreased in next three years as compared to 1998-99 and again increased in 2002-03 as compared to 2001-02.The services ranged from 10.74 percent in the year 1998-99 and 24.75 in the year 1993-94. It showed a decreasing trend up to 1998-99 as compared to 1993-94, but showed an increasing trend in next three years. It again decreased in 2002-03 as compared to the year 2001-02.The gross value added showed a fluctuating trend during the period under study but the absolute figures increased year after year during the period under study. The ratio of GVA to income from the sales and income from services ranged between 6.42 percent in 1994-95 to 11.94 percent in 2001-02.The percentage of depreciation ranged from 0.98 percent in 1998-99 to 5.56 percent in 2001-02. It affects the adverse on NVA. The NVA ranged between 3.63 percent in 1997-98 to 6.34 percent in 2000-01. The highest NVA was 6.34 percent in 2000-01 and the lowest was 3.63 percent in 1997-98. However, the absolute figures of NVA increased year after year during the period under study.

Showing the application of net value added, table 4.3b reveals that the share provided to employment cost in term of absolute figures increased year after year during the period under study. The share of employees was the highest during the period under study. The share to employees was the highest 65.39 percent in 1995-96 and the lowest 41.29 percent in 2000-01. It suggests that although the employees are enjoying the major share of value added. The share (in form of excise duty and taxation) available to government ranged from 2.66 percent in 1995-96 to 6.85 percent in 1999-00. It showed an increase in 1994-95 as compared to the year 1992-93 but it decreased slightly in 1995-96 as compared to the year 1994-95, but later an increasing trend. The share of government remained null during the last three years of study period. The share

of providers of capital ranged from 26.32 percent in 1998-99 to 58.45 percent in 2000-01. It showed a mix trend during the study period. Retained earnings also likewise showed a fluctuating trend.

On the basis of the foregoing analysis, it may be conclude that the **Banas** dairy generated sufficient value added during the period under study. The largest share of value added has gone to employees followed by its financers, business and government. Thus, it may be conclude that the management has succeeded in fulfilling to great extent, its responsibility towards the society at large. The share of employees decreased in 2002-03 as compared to 1993-94 due to utilization of advanced machinery and computerization. One may conclude that the **Banas** dairy generated enough value added and could thus be considered as a healthy unit from this point of view.

Table 4.4a
Generation of Value Added of Sumul Dairy from 1993-94 to 2002-03

Particular	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Sales	**13039.80**	99.16	**14881.37**	99.17	**18363.96**	**99.33**	**23446.76**	**99.43**	**28755.63**	**99.5**	**29006.07**	**99.3**	**31066.52**	**99.11**	**34469.00**	**98.89**	35256.35	**98.98**	**38187.51**	**99.00**
Add:Other Income	109.94	0.84	125.30	0.83	123.95	0.67	134.44	0.57	145.23	0.50	204.89	0.70	280.11	0.89	388.56	1.11	361.87	1.02	387.19	1.00
Total Income	**13149.74**	100.00	**15006.67**	100.00	**18487.91**	**100.00**	**23581.20**	**100.00**	**28900.86**	**100.00**	**29210.96**	**100.00**	**31346.63**	**100.00**	**34857.56**	**100.00**	**35618.22**	**100.00**	**38574.70**	**100.00**
Bought in of Materials & Services																				
* Materials (a)	11112.44	84.51	12686.68	84.54	15641.44	84.60	20115.34	85.30	24779.64	85.74	24756.80	84.75	26412.03	84.26	29468.58	84.54	29999.59	84.23	32945.90	85.41
* Services (b)	1248.33	9.49	1400.54	9.33	1780.71	9.63	2279.51	9.67	2678.58	9.27	2764.57	9.46	3196.81	10.20	3639.67	10.44	3931.55	11.04	3693.05	9.57
(a)+(b)	**12360.77**	94.00	**14087.22**	93.87	**17422.15**	**94.23**	**22394.85**	**94.97**	**27458.22**	**95.01**	**27521.37**	**94.21**	**29608.84**	**94.46**	**33108.25**	**94.98**	**33931.14**	**95.27**	**36638.95**	**94.98**
Gross Value Added A-B	**788.97**	6.00	**919.45**	**6.13**	**1065.76**	**5.77**	**1186.35**	**5.03**	**1442.64**	**4.99**	**1689.59**	**5.79**	**1737.79**	**5.54**	**1749.31**	**5.02**	**1687.08**	**4.73**	**1935.75**	**5.02**
Less: Depreaciation	114.28	0.87	126.15	0.84	149.64	0.81	189.19	0.80	342.15	1.18	334.59	1.15	304.19	0.97	315.94	0.91	355.74	1.00	400.26	1.04
Net Value Added	**674.69**	5.13	**793.30**	5.29	**916.12**	**4.96**	**997.16**	**4.23**	**1100.49**	**3.81**	**1355.00**	**4.64**	**1433.60**	**4.57**	**1433.37**	**4.11**	**1331.34**	**3.73**	**1535.49**	**3.98**

Source: *Computed from Published Annual Reports of the Unit*

Table 4.4b
Application of Value Added of Sumul Dairy from 1993-94 to 2002-03

Particulars	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Employees	557.76	82.67	598.71	75.47	742.04	81.00	767.49	76.97	835.83	75.95	1081.62	79.82	1142.66	79.71	1085.29	75.72	1049.48	78.83	1255.78	81.78
Government	0.00	0.00	20.00	2.52	10.00	1.09	5.00	0.50	20.00	1.82	20.00	1.48	10.00	0.70	15.00	1.05	15.00	1.13	20.00	1.30
Financiares	105.48	15.63	152.14	19.18	148.54	16.21	212.52	21.31	228.72	20.78	235.63	17.39	261.43	18.24	312.37	21.79	245.01	18.40	231.09	15.05
Business Retained Profit	11.45	1.70	22.45	2.83	15.54	1.70	12.15	1.22	15.94	1.45	17.75	1.31	19.51	1.36	20.71	1.44	21.85	1.64	28.62	1.86
Total	**674.69**	100.00	**793.30**	100.00	**916.12**	100.00	**997.16**	100.00	**1100.49**	100.00	**1355.00**	100.00	**1433.60**	100.00	**1433.37**	**100.00**	**1331.34**	100.00	**1535.49**	**100.00**

Source: *Computed from Published Annual Reports of the Unit*

The generation of value added and application of value added of **Sumul** dairy have been given in table 4.4a and table 4.4b respectively.

The table 4.4a shows the income from sales in the unit was always more than 99.10 percent during the study period and very little part was added through income from the service during the study period. The cost of bought in of materials and services to the sales and other income ranged from 94.00 percent in 1993-94 to 95.27 percent in 2001-02. It decreased in 1994-95 as compared to the year 1993-94, but it increased in next three years as compared to the year 1994-95. It also decreased in 1998-99 as compared to the year 1997-98 and an increasing trend during next three years as compared to the year 1998-99. At last it showed decrease in 2002-03 as compared to the year 2000-01. Analyzing the bought in of materials and services separately, the, the materials ranged from 84.23 percent in 2001-02 to 85.74 percent in 1997-98.It showed mix trend during the period under study. The services ranged from 9.27 percent in the year 1997-98 and 11.04 in the year 2000-01. It showed a constantly a fluctuating trend during the period under study. The depreciation ranged from 0.80 percent in 1996-97 to 1.18 percent in 1997-98. It again decreased in 2002-03 as compared to the year 2001-02.The gross value added showed a fluctuating trend during the period under study but the absolute figures increased year after year during the period under study. The ratio of GVA to income from the sales and income from services ranged from 4.73 percent in 2001-02 to 6.13 percent in 1994-95.The percentage of depreciation ranged from 0.80 percent in 1996-97 to 1.18 percent in 1997-98. It affects the adverse on NVA. The NVA ranged between 3.73 percent in 2001-02 to 5.29 percent in 1994-95. The highest NVA was 5.29 percent in 1994-95 and the lowest was 3.73 percent in 2001-02. However, the absolute figures of net value added increased year after year during the period under study.

Showing the application of net value added, table 4.4b reveals that the share provided to employees in term of absolute figures increased year after year during the period under study. The ratio of employees was the highest during the period under study. The share of value added to employees ranged from 75.47 percent in 1994-95 to 82.67 percent in 1993-94. It showed a fluctuating trend during the period under study. The largest share of value added has gone

to its employees. It suggests that although the employees are enjoying the major share of value added. The share (in form of excise duty and taxation) available to government ranged from 0.50 percent in 1996-97 to 2.52 percent in 1994-95. The share of providers of capital ranged from 15.05 percent in 2002-03 to 21.79 percent in 2000-01. It showed a mix trend during the study period. Retained earnings also likewise showed a fluctuating trend.

On the basis of the foregoing analysis, it may be conclude that the **Sumul** dairy generated sufficient value added during the period under study. The largest share of value added has gone to employees followed by its financers, business and government. Thus, it may be conclude that the management has succeeded not only in improving its profitability, but also in fulfilling to great extent, it responsibility towards the society at large. One may conclude that the **Sumul** dairy generated enough value added and could thus be considered as a healthy unit from this point of view.

Table 4.5a
Generation of Value Added of Vasudhara Dairy from 1993-94 to 2002-03

Particular	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Sales	**3085.01**	99.69	**4126.28**	99.83	**5420.56**	**99.71**	**6950.54**	**99.88**	**7725.79**	**99.73**	**9721.77**	**99.35**	**12080.16**	**99.24**	**13630.97**	**98.93**	**15149.46**	**99.06**	**17597.96**	**99.01**
Add:Other Income	9.69	0.31	7.13	0.17	15.69	0.29	8.15	0.12	20.60	0.27	63.27	0.65	92.01	0.76	147.80	1.07	143.01	0.94	176.51	0.99
Total Income	**3094.70**	100.00	**4133.41**	100.00	**5436.25**	**100.00**	**6958.69**	**100.00**	**7746.39**	**100.00**	**9785.04**	**100.00**	**12172.17**	**100.00**	**13778.77**	**100.00**	**15292.47**	**100.00**	**17774.47**	**100.00**
Bought in of Materials & Services																				
* Materials (a)	2610.82	84.36	3419.21	82.72	4654.26	85.62	5844.67	83.99	6537.81	84.40	7537.40	77.03	9601.82	78.88	10951.91	79.48	12027.24	78.65	14027.07	78.92
* Services (b)	375.76	12.14	441.41	10.68	520.58	9.58	595.58	8.56	801.39	10.35	1181.27	12.07	1355.92	11.14	1717.84	12.47	2256.01	14.75	2529.40	14.23
(a)+(b)	**2986.58**	96.50	**3860.62**	93.40	**5174.84**	**95.20**	**6440.25**	**92.55**	**7339.20**	**94.75**	**8718.67**	**89.10**	**10957.74**	**90.02**	**12669.75**	**91.95**	**14283.25**	**93.40**	**16556.47**	**93.15**
Gross Value Added A-E	**108.12**	3.50	**272.79**	**6.60**	**261.41**	**4.80**	**518.44**	**7.45**	**407.19**	**5.25**	**1066.37**	**10.90**	**1214.43**	**9.98**	**1109.02**	**8.05**	**1009.22**	**6.60**	**1218.00**	**6.85**
Less: Depreaciation	20.61	0.67	91.30	2.21	72.03	1.32	77.27	1.11	124.85	1.61	187.66	1.92	167.77	1.38	267.03	1.94	284.09	1.86	226.17	1.27
Net Value Added	**87.51**	2.83	**181.49**	4.39	**189.38**	**3.48**	**441.17**	**6.34**	**282.34**	**3.64**	**878.71**	**8.98**	**1046.66**	**8.60**	**841.99**	**6.11**	**725.13**	**4.74**	**991.83**	**5.58**

Source: *Computed from Published Annual Reports of the Unit*

Table 4.5b
Application of Value Added of Vasudhara Dairy from 1993-94 to 2002-03

Particulars	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Employees	101.40	115.87	144.87	79.82	177.16	93.55	323.42	73.31	316.78	112.20	478.06	54.40	543.05	51.88	636.14	75.55	685.42	94.52	744.38	75.05
Government	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.45	5.12	161.86	18.42	304.92	29.13	0.00	0.00	0.00	0.00	21.75	2.19
Financiares	8.15	9.31	33.32	18.36	10.01	5.29	112.86	25.58	127.88	45.29	148.37	16.88	161.03	15.39	179.75	21.35	227.22	31.34	203.88	20.56
Business Retained Profit	-22.04	-25.19	3.30	1.82	2.21	1.17	4.89	1.11	-176.77	-62.61	90.42	10.29	37.66	3.60	26.10	3.10	-187.51	-25.86	21.82	2.20
Total	**87.51**	100.00	**181.49**	100.00	**189.38**	100.00	**441.17**	100.00	**282.34**	100.00	**878.71**	100.00	**1046.66**	100.00	**841.99**	**100.00**	**725.13**	100.00	**991.83**	100.00

Source: *Computed from Published Annual Reports of the Unit*

The generation of value added and application of value added of **Vasudhara** dairy have been given in table 4.5a and table 4.5b respectively.

The table 4.5a shows the income from sales of the unit it was always more than 98.92 percent during the study period and very little part was added through income from the dividend and interest during the study period. It ranged from 0.17 percent in 1994-95 to 0.99 percent in 2002-03. The cost of bought in of materials and services to the sales and other income ranged from 96.50 percent in 1993-94 to 89.10 percent in 1998-99. It decreased in 1994-95 as compared to the year 1993-94, but it increased in next three years as compared to the year 1994-95. It also decreased in 1998-99 as compared to the year 1997-98 and an increasing trend during next three years as compared to the year 1998-99. At last it showed decrease in 2002-03 as compared to the year 2000-01. Analyzing the bought in of materials and services separately, the materials ranged from 77.03 percent in 1998-99 to 85.62 percent in 1995-96.It showed mix trend during the period under study. The services ranged from 8.56 percent in the year 1996-97 and 14.75 in the year 2001-02. It showed a constantly a fluctuating trend during the period under study. The gross value added showed a fluctuating trend during the period under study but the absolute figures fluctuated during the period under study. The ratio of GVA to income from the sales and income from services ranged from 3.50 percent in 1993-94 to 9.98 percent in 1999-00. The depreciation ranged from 0.67 percent in 1993-94 to 1.94 percent in 2000-01. It affects the reverse on NVA. The NVA ranged between 2.83 percent in 1993-94 to 8.98 percent in 1998-99. The highest NVA was 8.98 percent in 1998-99 and the lowest was 2.83 percent in 1993-94. However, the absolute figures of net value added increased year after year during first seven years of study period. It decreased in 2001-02 as compared to the year 2000-01 and again an increased in the year 2002-03 as compared to the year 2001-02.

Showing the application of net value added, table 4.5b reveals that the share provided to employees in term of absolute figures increased year after year during the period under study. The ratio of employees was the highest during the period under study. The share of value added to employees ranged from 51.88 percent in 1999-00 to 115.87 percent in 1993-94. It showed a fluctuating trend during the period under study. The largest share of value

added has gone to its employees. It suggests that although the employees are enjoying the major share of value added. The share (in form of excise duty and taxation) available to government ranged from 2.19 percent in 2002-03 to 29.13 percent in 1999-00. The share of providers of capital ranged from 5.29 percent in 1995-96 to 45.29 percent in 1997-98. It showed a mix trend during the study period. Retained earnings were negative during 1993-94, 1997-98 and 2001-02. It showed a fluctuating trend during remaining period of study.

On the basis of the foregoing analysis, it may conclude that the **Vasudhara** dairy generated sufficient value added during the period under study except years of losses.. The largest share of value added has gone to employees followed by its financers, business and government. During the first four years and 2000-01 to 2001-02 they were not paid any share to government. Thus, it may be conclude that the management has succeeded not only in improving its profitability, but also in fulfilling to great extent, it responsibility towards the society at large. One may conclude that the **Vasudhara** dairy generated enough value added and could thus be considered as a healthy unit from this point of view.

Table 4.6a

Generation of Value Added of Dudh Dhara Dairy from 1993-94 to 2002-03

Particular	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Sales	**1015.28**	99.57	**1612.36**	99.87	**1879.41**	**99.76**	**1848.82**	**99.61**	**1743.30**	**99.37**	**1724.23**	**99.62**	**1681.12**	**99.78**	**1678.16**	**99.44**	**1743.51**	**99.67**	**2069.42**	**99.29**
Add:Other Income	4.43	0.43	2.15	0.13	4.50	0.24	7.28	0.39	11.12	0.63	6.66	0.38	3.66	0.22	9.48	0.56	5.70	0.33	14.86	0.71
Total Income	**1019.71**	100.00	**1614.51**	100.00	**1883.91**	**100.00**	**1856.10**	**100.00**	**1754.42**	**100.00**	**1730.89**	**100.00**	**1684.78**	**100.00**	**1687.64**	**100.00**	**1749.21**	**100.00**	**2084.28**	**100.00**
Bought in of Materials & Services																				
* Materials (a)	726.50	71.25	1284.21	79.54	1515.82	80.46	1470.44	79.22	1346.32	76.74	1348.38	77.90	1284.05	76.21	1286.18	76.21	1301.47	74.40	1653.20	79.32
* Services (b)	156.44	15.34	198.40	12.29	228.62	12.14	213.63	11.51	212.22	12.10	196.28	11.34	198.63	11.79	191.67	11.36	182.66	10.44	188.67	9.05
(a)+(b)	**882.94**	86.59	**1482.61**	91.83	**1744.44**	**92.60**	**1684.07**	**90.73**	**1558.54**	**88.84**	**1544.66**	**89.24**	**1482.68**	**88.00**	**1477.85**	**87.57**	**1484.13**	**84.84**	**1841.87**	**88.37**
Gross Value Added A-	**136.77**	13.41	**131.90**	**8.17**	**139.47**	**7.40**	**172.03**	**9.27**	**195.88**	**11.16**	**186.23**	**10.76**	**202.10**	**12.00**	**209.79**	**12.43**	**265.08**	**15.16**	**242.41**	**11.63**
Less: Depreaciation	8.38	0.82	9.11	0.56	15.32	0.81	19.60	1.06	19.12	1.09	4.84	0.28	12.33	0.73	12.42	0.74	48.38	2.77	33.36	1.60
Net Value Added	**128.39**	12.59	**122.79**	7.61	**124.15**	**6.59**	**152.43**	**8.21**	**176.76**	**10.07**	**181.39**	**10.48**	**189.77**	**11.27**	**197.37**	**11.69**	**216.70**	**12.39**	**209.05**	**10.03**

Source: *Computed from Published Annual Reports of the Unit*

Table 4.6b

Application of Value Added of Dush Dhara Dairy from 1993-94 to 2002-03

Particulars	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Employees	70.54	54.94	81.13	66.07	93.15	75.03	125.78	82.52	128.96	72.96	137.17	75.62	194.65	102.57	185.26	93.86	184.37	85.08	187.76	89.82
Government	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Financiares	27.49	21.41	24.61	20.04	26.44	21.30	25.05	16.43	28.52	16.13	40.29	22.21	48.11	25.35	20.29	10.28	14.16	6.53	12.92	6.18
Business Retained Profit	30.36	23.65	17.05	13.89	4.56	3.67	1.60	1.05	19.28	10.91	3.93	2.17	-52.99	-27.92	-8.18	-4.14	18.17	8.38	8.37	4.00
Total	**128.39**	100.00	**122.79**	100.00	**124.15**	100.00	**152.43**	100.00	**176.76**	100.00	**181.39**	100.00	**189.77**	100.00	**197.37**	**100.00**	**216.70**	100.00	**209.05**	100.00

Source: *Computed from Published Annual Reports of the Unit*

The generation of value added and application of value added of **Dudh Dhara** dairy have been given in table 4.6a and table 4.6b respectively.

The table 4.6a shows the income from sales of the unit it was always more than 99.28 percent during the study period and very little part was added through income from the service during the study period. It ranged from 0.13 percent in 1994-95 to 0.71 percent in 2002-03. The cost of bought in of materials and services to the sales and other income ranged from 86.59 percent in 1993-94 to 92.60 percent in 1995-96. It increased in 1994-95 and 1995-96 as compared to the year 1993-94, but it decreased in next five years as compared to the year 1996-97. It also increased in 2002-03 as compared to the year 2001-02. Analyzing the bought in of materials and services separately, the materials ranged from 71.25 percent in 1993-94 to 80.46 percent in 1995-96.It showed mix trend during the period under study. The services ranged from 9.05 percent in the year 2002-03 and 15.34 in the year 1993-94. It showed a constantly a decreasing trend except 1997-98 during the period under study. The gross value added showed a fluctuating trend during the period under study and the absolute figures also fluctuated during the period under study. The ratio of GVA to income from the sales and income from services ranged from 7.40 percent in 1995-96 to 13.41 percent in 1993-94. The depreciation ranged from 0.28 percent in 1998-99 to 1.60 percent in 2002-03. It affects the adverse on NVA. The NVA ranged between 10.03 percent in 2002-03 to 12.59 percent in 1993-94. The highest NVA was 12.59 percent in 1993-94 and the lowest was 10.03 percent in 2002-03. However, the absolute figures of net value added increased year after year during study period.

Showing the application of net value added, table 4.6b reveals that the share provided to employees in term of absolute figures increased year after year during the period under study. The ratio of employees was the highest during the period under study. The share of value added to employees ranged from 54.94 percent in 1993-94 to 102.57 percent in 1999-2000. It showed an increasing trend up to 1996-97 but later decreasing trend up to 1997-98. It again increased in 1998-99 as compared to the year 1997-98. The largest share of value added has gone to its employees. It suggests that the employees are enjoying the major share of value added. The share (in form of excise duty and taxation)

available to government was null. The share of providers of capital ranged from 6.18 percent in 2002-03 to 21.41 percent in 1993-94. It showed a mix trend during the study period. There were no retained earnings in 1999-00 and 2000-01 due to net losses.

On the basis of the foregoing analysis, it may be conclude that the **Dudh-Dhara** dairy generated sufficient value added during the period under study except years of losses.. The largest share of value added has gone to employees followed by its financers, business and government. During the study period they were not paid any share to government. Thus, it may be conclude that the management has succeeded not only in improving its profitability, but also in fulfilling to great extent, it responsibility towards the society at large. One may conclude that the **Dudh-Dhara** dairy generated enough value added and could thus be considered as a healthy unit from this point of view.

Table 4.7a
Generation of Value Added of Gopal Dairy from 1993-94 to 2002-03

Particular	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Sales	**1026.31**	97.51	**1268.24**	98.43	**1497.17**	**98.46**	**1746.85**	**98.98**	**2165.56**	**99.07**	**2685.76**	**99.31**	**3728.34**	**99.4**	**4582.75**	**99.29**	5062.39	**99.44**	**6780.63**	98.91
Add:Other Income	26.21	2.49	20.20	1.57	23.48	1.54	18.02	1.02	20.27	0.93	18.61	0.69	22.50	0.60	32.86	0.71	28.49	0.56	74.62	1.09
Total Income	**1052.52**	100.00	**1288.44**	100.00	**1520.65**	**100.00**	**1764.87**	**100.00**	**2185.83**	**100.00**	**2704.37**	**100.00**	**3750.84**	**100.00**	**4615.61**	**100.00**	**5090.88**	**100.00**	**6855.25**	100.00
Bought in of Materials & Services																				
* Materials (a)	752.91	71.53	921.99	71.56	1033.04	67.93	1243.66	70.47	1599.95	73.20	2079.78	76.90	2932.64	78.19	3770.65	81.69	4146.09	81.44	5854.93	85.41
* Services (b)	175.90	16.71	164.07	12.73	203.97	13.41	237.35	13.45	251.62	11.51	281.66	10.41	342.67	9.14	372.70	8.07	419.23	8.23	517.46	7.55
(a)+(b)	**928.81**	88.24	**1086.06**	84.29	**1237.01**	**81.34**	**1481.01**	**83.92**	**1851.57**	**84.71**	**2361.44**	**87.31**	**3275.31**	**87.33**	**4143.35**	**89.76**	**4565.32**	**89.67**	**6372.39**	92.96
Gross Value Added A-B	**123.71**	11.76	**202.38**	**15.71**	**283.64**	**18.66**	**283.86**	**16.08**	**334.26**	**15.29**	**342.93**	**12.69**	**475.53**	**12.67**	**472.26**	**10.24**	**525.56**	**10.33**	**482.86**	7.04
Less: Depreaciation	10.42	0.99	11.19	0.87	16.28	1.07	21.19	1.20	21.17	0.97	20.34	0.75	21.02	0.56	21.34	0.46	23.06	0.45	24.17	0.35
Net Value Added	**113.29**	10.77	**191.19**	14.84	**267.36**	**17.59**	**262.67**	**14.88**	**313.09**	**14.32**	**322.59**	**11.94**	**454.51**	**12.11**	**450.92**	**9.78**	**502.50**	**9.88**	**458.69**	6.69

Source: *Computed from Published Annual Reports of the Unit*

Table 4.7b
Application of Value Added of Gopal Dairy from 1993-94 to 2002-03

Particulars	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Employees	152.84	134.91	161.11	84.27	189.42	70.85	210.63	80.19	243.09	77.64	290.74	90.13	355.71	78.26	376.06	83.40	379.05	75.43	377.98	82.40
Govemment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50	1.42
Financiares	23.15	20.43	33.08	17.30	38.42	14.37	44.30	16.87	53.48	17.08	60.92	18.88	65.00	14.30	72.47	16.07	64.56	12.85	51.16	11.15
Business Retained Profit	-62.70	-55.34	-3.00	-1.57	39.52	14.78	7.74	2.95	16.52	5.28	-29.07	-9.01	33.80	7.44	2.39	0.53	58.89	11.72	23.05	5.03
Total	**113.29**	100.00	**191.19**	100.00	**267.36**	100.00	**262.67**	100.00	**313.09**	100.00	**322.59**	100.00	**454.51**	100.00	**450.92**	**100.00**	**502.50**	**100.00**	**458.69**	**100.00**

Source: *Computed from Published Annual Reports of the Unit*

The generation of value added and application of value added of **Gopal** dairy, Rajkot have been given in table 4.7a and table 4.7b respectively.

The table 4.7a shows the income from sales in the unit was always more than 98.42 percent during the study period and very little part was added through income from the service during the study period. The cost of bought in of materials and services to the sales and other income ranged from 81.34 percent in 1995-96 to 92.96 percent in 2002-03. It was 88.24 percent in the year 1993-94 which decreased up to 87.33 percent in 1999-00 than increased during the last three years. Analyzing the cost of bought in materials and services separately, the cost of bought in material ranged between 67.93 percent in the year 1995-96 and 85.41 percent in the year 2002-03. It registered a upward trend except 1996-97 during the study period. The cost of services fluctuated between 7.55 percent in 2002-03 to 16.71 in the year 1993-94. It continuously decreased during the study period.

The gross value added showed a fluctuated trend during the period under study but absolute figures increased year after year during the study period. The ratio GVA to income from sales and income from services ranged between 7.04 percent in 2002-03 to 18.66 percent in 1995-96. The percentage of depreciation in 1993-94 was 0.99 percent to 0.35 percent in 2002-03 which the lowest level during the study period. The NVA was 6.69 percent in the year 2002-03 which was the lowest level during the period under study. However, the absolute figures of NVA increased year after year during the study period.

Showing the application of value added of the NVA , table 4.7b reveals that the share provided to employment cost in term of absolute figure increased year after year except 2002-03 during the study period. The ratio of employees was the highest during the period under study. The share to employees was the highest in 1993-94 and the lowest of 70.85 percent in 1995-96. It suggest that employees are enjoying the major share of value added. The share of provider's of capital ranged between 11.15 percent in 2002-03 to 20.43 percent in 1993-94. It showed fluctuating trend during the period under study. The share of government was nil during the study period except 2002-03.

On the basis of the above analysis, it may be concluded that the **Gopal** dairy generated a good value added, thus could be considered as a normal unit from this point of view. The largest share of value added gone to the employees followed by financiers and government. Thus, one may decide that the management fulfilling the responsibilities towards the society at large.

Table 4.8a
Generation of Value Added of Baroda Dairy from 1993-94 to 2002-03

Particular	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Sales	**8049.76**	99.45	**9239.10**	99.42	**10704.65**	**99.54**	**12792.85**	**99.52**	**13684.63**	**99.57**	**15591.87**	**99.54**	**17593.66**	**99.51**	**19292.79**	**99.36**	**20340.18**	**99.37**	**23000.40**	**99.41**
Add:Other Income	44.57	0.55	53.60	0.58	49.72	0.46	62.15	0.48	58.59	0.43	72.62	0.46	85.99	0.49	124.96	0.64	129.98	0.63	137.21	0.59
Total Income	**8094.33**	100.00	**9292.70**	100.00	**10754.37**	**100.00**	**12855.00**	**100.00**	**13743.22**	**100.00**	**15664.49**	**100.00**	**17679.65**	**100.00**	**19417.75**	**100.00**	**20470.16**	**100.00**	**23137.61**	**100.00**
Bought in of Materials & Services																				
* Materials (a)	5950.36	73.51	6998.35	75.31	8305.62	77.23	9888.93	76.93	10433.36	75.92	11774.79	75.17	13475.10	76.22	14515.04	74.75	15664.69	76.52	17811.78	76.98
* Services (b)	1199.11	14.81	1306.42	14.06	1453.94	13.52	1839.43	14.31	1968.01	14.32	2235.38	14.27	2355.76	13.32	2714.68	13.98	2529.37	12.36	2910.43	12.58
(a)+(b)	**7149.47**	88.32	**8304.77**	89.37	**9759.56**	**90.75**	**11728.36**	**91.24**	**12401.37**	**90.24**	**14010.17**	**89.44**	**15830.86**	**89.54**	**17229.72**	**88.73**	**18194.06**	**88.88**	**20722.21**	**89.56**
Gross Value Added A-B	**944.86**	11.68	**987.93**	**10.63**	**994.81**	**9.25**	**1126.64**	**8.76**	**1341.85**	**9.76**	**1654.32**	**10.56**	**1848.79**	**10.46**	**2188.03**	**11.27**	**2276.10**	**11.12**	**2415.40**	**10.44**
Less: Depreaciation	146.01	1.80	143.26	1.54	133.41	1.24	132.32	1.03	146.32	1.06	267.60	1.71	274.31	1.55	278.47	1.43	229.43	1.12	262.75	1.14
Net Value Added	**798.85**	9.88	**844.67**	9.09	**861.40**	**8.01**	**994.32**	**7.73**	**1195.53**	**8.70**	**1386.72**	**8.85**	**1574.48**	**8.91**	**1909.56**	**9.84**	**2046.67**	**10.00**	**2152.65**	**9.30**

Source: *Computed from Published Annual Reports of the Unit*

Table 4.8b
Application of Value Added of Baroda Dairy from 1993-94 to 2002-03

Particulars	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Employees	652.38	81.66	741.18	87.75	793.56	92.12	888.77	89.38	1013.19	84.75	1182.07	85.24	1325.50	84.19	1618.49	84.76	1677.81	81.98	1904.85	88.49
Government	35.00	4.38	10.00	1.18	0.00	0.00	0.00	0.00	8.40	0.70	10.00	0.72	15.00	0.95	30.00	1.57	50.00	2.44	55.00	2.55
Financiares	84.81	10.62	83.64	9.90	56.16	6.52	93.67	9.42	159.75	13.36	174.33	12.57	208.57	13.25	228.87	11.99	279.30	13.65	149.87	6.96
Business Retained Profit	26.66	3.34	9.85	1.17	11.68	1.36	11.88	1.19	14.19	1.19	20.32	1.47	25.41	1.61	32.20	1.69	39.56	1.93	42.93	1.99
Total	**798.85**	100.00	**844.67**	100.00	**861.40**	100.00	**994.32**	100.00	**1195.53**	100.00	**1386.72**	100.00	**1574.48**	100.00	**1909.56**	**100.00**	**2046.67**	**100.00**	**2152.65**	**100.00**

Source: *Computed from Published Annual Reports of the Unit*

The generation of value added and its application of Baroda Dairy during the period under study have been presented in table 4.8a and 4.8b respectively.

The table 4.8a shows the income from sales in the unit. It was always more than 99.40 percent during the study period. It ranged from 99.41 percent in 2002-03 to 99.57 percent in 1997-98. A very little part was added through income from the service during the study period. It ranged from 0.43 percent in 1997-98 to 0.59 percent in 2002-03. The cost of bought in of materials and services to sales and income from services ranged from 88.32 percent in 1993-94 to 91.24 percent in 1996-97. It increased up to 1996-97 as compared to the year 1993-94, but it decreased in 1997-98 and 1998-99 as compared to the year 1996-97. It again showed an increasing trend from 1999-00 to 2002-03. Analyzing the cost of bought in of materials and services separately, the materials ranged from 73.51 percent in 1993-94 to 77.23 percent in 1995-96. It showed an increasing trend during the first three years, but decreased in next two years as compared to the year 1996-97. It again increased in 1999-00 as compared to the year 1998-99, but showed an increasing trend in the last two years. The services ranged from 12.36 percent in 2001-02 to 14.81 percent in 1993-94. It showed a decreasing trend except 1997-98 as compared to 1993-94 during the study period. The depreciation ranged from 1.03 percent in 1996-97 to 1.80 percent in 1993-94. The absolute figures of gross value added and net value added were constantly increasing year after year during the study period. The ratio of net value added ranged between 7.73 percent in 1996-97 to 9.88 percent in 1993-94. The highest NVA was 9.88 percent in 1993-94 and the lowest was 7.73 percent in 1996-97. It showed a fluctuating trend during the period under study. However, the absolute figures of net value added increased year after year during the period under study.

The table 4.8b shows that the share of value added to employees ranged from 81.66 percent in 1993-94 to 89.38 percent in 1996-97. It increased up to 1995-96, but it decreased in 1996-97 and 1997-98 as compared to the year 1995-96. It also increased in 1998-99 as compared to the year 1997-98, than again decreasing trend up to 2001-02 as compared to the year 2001-02.The absolute figure of share of employees were increasing year after year under the study period. The largest share of value added has gone to employees. The share in form of excise and taxes available to government ranged from 0.70

percent in 1997-98 to 4.38 percent in 1993-94. The share available to government during the 1995-96 and 1996-97 were zero. The share of providers of capital ranged from 6.52 percent in 1995-96 to 13.65 percent in 2001-02. It showed a constant fluctuating trend during the period under study. The business retained searnings ranged from 1.17 percent in 1994-95 to 3.34 percent in 1993-94.

On the basis of the above analysis, it may be concluded that the **Baroda** dairy true to their reputation, increased their wealth or value added during the period under study and could thus be considered as a healthy unit from this point of view. The largest share of value added has gone to the employees followed by its financers and government respectively. Thus, it may be conclude that the management has succeeded not only in improving its profitability, but also in fulfilling, its responsibility toward the society at large. The employees were enjoying the major share of value added. One may conclude that the Baroda dairy generated enough value added and could thus be considered as a healthy unit from this point of view.

Table 4.9a
Generation of Value Added of Amul Dairy from 1993-94 to 2002-03

Particular	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	2001-02	%	2002-03	%
Sales	**32890.72**	99.71	**34449.43**	98.83	**38026.32**	**98.49**	**40010.22**	**99.01**	**41735.34**	**98.97**	**46234.63**	**98.08**	**48714.09**	**97.75**	**50919.13**	**97.91**	**46878.07**	**98.21**	**48833.67**	**98.13**
Add:Other Income	96.48	0.29	406.19	1.17	583.87	1.51	399.52	0.99	434.19	1.03	906.67	1.92	1119.64	2.25	1089.15	2.09	854.81	1.79	929.00	1.87
Total Income	**32987.20**	100.00	**34855.62**	100.00	**38610.19**	**100.00**	**40409.74**	**100.00**	**42169.53**	**100.00**	**47141.30**	**100.00**	**49833.73**	**100.00**	**52008.28**	**100.00**	**47732.88**	**100.00**	**49762.67**	**100.00**
Bought in of Materials & Services																				
* Materials (a)	24035.72	72.86	25763.33	73.91	29134.57	75.46	29063.87	71.92	30500.06	72.33	34169.53	72.48	36013.85	72.27	38372.57	73.78	36388.46	76.23	38181.63	76.73
* Services (b)	6575.50	19.93	6007.65	17.24	6289.14	16.29	7314.57	18.10	7209.27	17.10	7313.12	15.51	8444.36	16.95	8339.36	16.03	6175.76	12.94	6641.07	13.35
(a)+(b)	**30611.22**	92.79	**31770.98**	91.15	**35423.71**	**91.75**	**36378.44**	**90.02**	**37709.33**	**89.43**	**41482.65**	**87.99**	**44458.21**	**89.22**	**46711.93**	**89.81**	**42564.22**	**89.17**	**44822.70**	**90.08**
Gross Value Added A-B	**2375.98**	7.21	**3084.64**	**8.85**	**3186.48**	**8.25**	**4031.30**	**9.98**	**4460.20**	**10.57**	**5658.65**	**12.01**	**5375.52**	**10.78**	**5296.35**	**10.19**	**5168.66**	**10.83**	**4939.97**	**9.92**
Less: Depreaciation	384.74	1.17	705.89	2.03	645.73	1.67	1146.09	2.84	822.30	1.95	1514.79	3.21	1382.83	2.77	1377.64	2.65	1349.38	2.83	1336.59	2.69
Net Value Added	**1991.24**	6.04	**2378.75**	6.82	**2540.75**	**6.58**	**2885.21**	**7.14**	**3637.90**	**8.62**	**4143.86**	**8.80**	**3992.69**	**8.01**	**3918.71**	**7.54**	**3819.28**	**8.00**	**3603.38**	**7.23**

Source: *Computed from Published Annual Reports of the Unit*

Table 4.9b
Application of Value Added of Amul Dairy from 1993-94 to 2002-03

Particulars	1993-94	%	1994-95	%	1995-96	%	1996-97	%	1997-98	%	1998-99	%	1999-00	%	2000-01	%	%	%	%	%
Employees	954.58	47.94	1099.95	46.24	1241.44	48.86	1280.00	44.36	1276.91	35.10	1565.34	37.77	1541.07	38.60	1438.60	36.71	1594.98	41.76	1527.69	42.40
Government	438.57	22.02	532.61	22.39	438.21	17.25	439.96	15.25	314.17	8.64	468.87	11.31	324.54	8.13	431.02	11.00	432.59	11.33	430.65	11.95
Financiares	558.16	28.03	695.11	29.22	801.01	31.53	1095.02	37.95	1946.07	53.49	2006.97	48.43	2005.79	50.24	1916.08	48.90	1645.97	43.10	1445.95	40.13
Business Retained Profit	39.93	2.01	51.08	2.15	60.09	2.37	70.23	2.43	100.75	2.77	102.68	2.48	121.29	3.04	133.01	3.39	145.74	3.82	199.09	5.53
Total	**1991.24**	100.00	**2378.75**	100.00	**2540.75**	100.00	**2885.21**	100.00	**3637.90**	100.00	**4143.86**	100.00	**3992.69**	100.00	**3918.71**	**100.00**	**3819.28**	**100.00**	**3603.38**	**100.00**

Source: *Computed from Published Annual Reports of the Unit*

The generation of value added and its application in Amul Dairy during the period under study have been presented in table 4.9a and 4.9b. The table 4.9a shows the income from sales in the unit was always more than 97.74 percent during the study period and very little part was added through income from the service during the study period. The cost of bought in of materials and service in term of percentage was 92.79 percent in the year 1993-94 which decreased to 89.17 percent in 2001-02 than went up to 90.08 percent in 2002-03. Analyzing the cost of procurement and services separately, the cost of bought in of materials ranged between 71.92 percent in the year 1996-97 and 76.73 in the year 2002-03. Though it registered a up ward trend during first three years, decreased in 1996-97, than increased in the next two years. Finally, it was increased during last four years except 2001-02 during the study period.

The cost of services fluctuated between 13.35 percent in 2002-03 to 19.93 percent in 1993-94. There was also declined trend during first two years, increased in the fourth year, again declined in next two years and again increased up to 16.95 percent in the year 1999-00 and finally went down to 13.35 percent in 2002-03.

The gross value added showed a fluctuating trend during the period under study but the absolute figures increased year after year during the period under study. The ratio of GVA to income from the sales and income from services ranged between 7.21 percent in 1993-94 to 12.01 percent in 1998-99. The percentage of depreciation in 1993-94 was 1.17 percent which increased to 3.21 percent the highest level in 1998-99, than decreased to 2.69 percent in 2002-03. It affects the adverse on NVA. The NVA ranged between 6.04 percent in 1993-94 to 8.80 percent in 1998-99. The highest NVA was 8.80 percent in 1998-99 and the lowest was 6.04 percent in 1993-94. However, the absolute figures of NVA increased year after year up to the first six years and thereafter decreasing trend during the last four years of the study period.

Showing the application of net value added, table 4.9b reveals that the share provided to employment cost in term of absolute figures increased year after year up to 1998-99 except 1997-98 during the period under study. It was increased in 1999-00 and decreased in 2000-01 and again increased and finally decreased in the last year. The ratio of employees was the highest during the

period under study. The share to employees was highest 48.86 percent in 1995-96 and the lowest 35.10 percent in 1997-98. It suggests that the employees are enjoying the major share of value added. The share of providers of capital has also increased significantly. As a result the retained profits of the unit significantly come down. The share paid to the government in the form of excise duty ranged between 8.13 percent in 1999-00 to 22.39 percent in 1994-95. It decreased during the first four years and than after increased in 1998-99 and an increased in 1999-00. Finally, it was an increased up to 11.95 percent in 2002-03. The share of government was more than 8.12 percent during the study period. The share made available to financial institutions in the form of absolute figure of interest increased steadily during the first six years and decreased during next four years during study period.

On the basis of the above analysis, it may be concluded that the **Amul** dairy generated sufficient value added and could thus be considered as a healthy unit from this point of view. The largest share of value added has gone to the employees followed by financiers and government. Thus, it may be concluded that the management has succeeded in fulfilling to great extent, its responsibility toward the society at large.

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CHAPTER - V
ANALYSIS OF PROFITABILITY

1. Introduction
2. Meaning
3. Measurement of Profitability
4. FrameWork of Analysis
5. Analysis of Profitability of the Units Under Study
    - References

CHAPTER - V
ANALYSIS OF PROFITABILITY

1. Introduction :

Profit is the soul of the business, without which it is lifeless. The word 'profit' has been defined in a number of ways **Kohler** defined profits as " A general term for the excess of revenue proceeds or selling price over related costs.[1]". According to **Davidson, Stickney and Weil**, "The term net income, earnings and profits are synonymous used interchangeably in corporate annual reports[2]". Actually, the meaning of profit differs according to the use and purpose of the figure. For accounting purpose the profit is the difference between total revenue and total expenses over a period of time. Profit is a parameter by which economic performance can be assessed. Profit maximization as a decision has also been criticized on other grounds. Profit maximization is not relevant to modern enterprises because they are now operating in totally different environments, and varied groups like financing institutions, consumers, employees, government and society besides stockholders have a stake in it. Each has its own objectives.

2. Meaning :

The word profitability is composed of two words Profit and Ability. The profit is a surplus of income over expenditure. The term 'ability' reflects the power of the enterprise to earn the profit. This ability is also referred to as "earning power" or "operating performance" of the concerned investment. Profitability indicates the capacity of management to generate surplus in the process of business operations. Sometimes the 'profit' and 'profitability' are used synonymously but there is difference between them. According to **Chakraborty**, "The term profitability has a sense of relativity, whereas the term profit is used in absolute sense[3]". Profitability is an indication of the efficiency with which the operations of the enterprise are carried on. Poor operational performance may indicate poor sales and profit. A lower profitability may arise due to the lack of control over expenses. In accountancy profitability may be described as a yardstick of the enterprise performance and indicates public acceptance of the products. It is relative concept which regulates and

controls management policy and decision. In words of **Weston and Brigham**, "Profitability is a net result of large number of policies and decisions[4]".

3. Measurement of Profitability :

Quantification of profitability or measurement of profitability is needed for taking policy decision required under difference circumstances. The profitability can be measured in terms of different components of income statement or balance sheet. Ratio analysis can make comparison between different size firms much more meaningful. We can measure performance of unit through profitability. To justify, profitability we have to analysis the financial statement of enterprise. The profitability can be measured in term of different components of income statement and balance sheet. According to **Block** and **Hirt** "The income statement is the major device for measuring the profitability of a firm over a period of time[5]". In the word of **Murthy, "**The most important measure of profitability of company is Ratio. i.e. Profitability of assets, variously referred to as earning power of enterprise, return on total investment or total resources committed to operations[6]" Thus, profitability ratios are calculated to measure the operating efficiency of an enterprise. These ratios can be determined on the basis of either sales or investments. According to **Van Horne,** "Profitability ratios are of two types: those sharing profitability in relation to sales, and those showing profitability in relation to investment[7]". Ratio analysis, particularly used in comparative manner, is a useful broad indicator to weaknesses in company operations and policies.

4. Frame-Work of Analysis :

Here the researcher has calculated ratios as follows.

(a) The profitability ratios are in relation to sales.

1. Gross Profit Ratio
2. Net Profit Ratio

(b) The profitability in relation to the investments can be measured as under.

1. Return on Total Capital
2. Return on Net Capital Employed
3. Return on Shareholders' Fund

(c) The efficiency of utility of assets are measured as under.

1. Total Assets Turnover Ratio
2. Fixed assets Turnover Ratio
3. Working Capital Turnover Ratio

(a) The profitability ratios are in relation to sales.

1. Gross Profit Ratio = Gross Profit / Net Sales * 100 :

Gross Profit is difference between net sales and the cost of goods sold. A sufficient margin of gross profit is essential to meet operating expenses and to have a sufficient amount of operating profit. This in turn would help the organization to meet the obligations towards the lenders and owners.

2. Net Profit Ratio : =Net Profit / Net Sales * 100

It is measured by dividing net profits after taxes by sales. Net profit after tax equals the sum of dividends and provision as co-operative rules and retained earnings. Net profit ratio enables one to measure the relationship between sales and net profits, it is an indicator of the efficiency of the management in production, selling and marketing. "A high net profit ratio would ensure adequate return to the owners as well as enable a firm to withstand in adverse economic conditions when the selling price is declining, cost of production is rising and demand for the product is falling[8]". In case the net profit ratio is inadequate, the unit will not be in a position to pay off its debts and give a satisfactory return to its shareholders. "A high net profit ratio would indicate a sound financial position of a enterprise with which the firm will be able to face the problem of falling selling price, rising cost of production or declining demand of product[9]" . The ratio measures the efficiency of operation of the unit.

(b) The profitability in relation to the investments can be measured as under.

Profitability of an enterprise may also be measured in relation to investment. Investment refers to total assets, capital employed, or owners' equity. In general term efficiency is measured by the input-output analysis. By measuring the output as a proportion of the input, and the comparing the results of similar other firms or periods the relative change of a firm in its profitability can be expressed. The Return On Investment (ROI) thus shows the efficiency of a

business as a whole. Higher the ROI, the better is the economic condition of a firm. Return on Investment is a product of two components- profit margin and turnover. ROI is called as the broadest measure of performance and is a very significant measure for inter firm comparisons and evaluating performance of various units within a firm.

1. The Return on Gross Capital Employed is computed as follows:

Net Profit / Total Assets * 100

Total assets have been financed from the funds supplied by creditors and owners. This ratio, therefore, evaluates the effectiveness in using these funds Return can be compared with the cost of using these funds.

2. Return on Net Capital Employed :

Return on capital employed is computed as follows.

Net Profit / Capital Employed * 100

Capital employed is the amount of funds invested in a business. It can be calculated from the balance sheet in the following manner.

Capital Empolyed includes Equity share capital , Reserves & surpluses, Long term loans & liabilities, Less Miscellaneous expenditures.

The concept of return on capital employed is very important in financial management as it is used to determine whether a reasonable rate of return has been achieved or not. It is used as a basis for various managerial decisions.

3. Return on Shareholders' Funds or Net Worth :

Return on Shareholders' funds or proprietor's fund is computed by the following formula.

Net profit after taxes / Shareholders fund *100

Net profit for this purpose is the net profit which is arrived at after deducting, taxes and interest on long term loan. While, shareholders fund includes share capital, capital reserves, revenues reserves and accounts of appropriations profit. This ratio shows the profitableness of the shareholders investments and is also known as the return on net worth.

(c) The efficiency of utility of assets is measured as under.

Turnover ratios measure the effectiveness with which a firm uses the resources at its disposal. It helps in disclosing under or over investment in assets and the adequacy of sales in relation to the investment in assets. Efficient rotation of resources would lead to higher profitability. By this ratio we should know that the assets utilized more or less effectively. This ratio is useful for analyzing the operation efficiency of an enterprise.

1. Total Assets Turnover Ratio

2. Fixed Assets Turnover Ratio

3. Working Capital Turnover Ratio

1. Total Assets Turnover Ratio :

A unit should manage its total assets efficiently and should generate maximum sales through their proper utilization. This is measured through the Total assets turnover ratio. This is calculated by dividing the value of total assets into sales. This ratio is significant as it shows the enterprise's ability of generation sales per rupee of investment in total assets. The ratio is expressed in integers rather than as a percentage. The Total assets turnover ratio is computed as follows:

Sales/ Total assets

2. Fixed Assets Turnover Ratio :

The Fixed Assets Turnover Ratio is computed as follows:

Sales / Fixed Assets

Investment in fixed assets is made for producing sales. Therefore, the ratio of fixed assets to sales measures the efficiency with which the unit is utilizing its investment in fixed assets. It also indicates the adequacy of sales in relation to investment in fixed assets. The ratio can serve as an index regarding the policy which should be followed in future. Acquisition of new plant or other asset would be facilitated with the analysis of the fixed assets turnover. Fixed asset turnover ratio can be further analyzed into turnover of each item of fixed assets to examine which asset has been properly used and which asset has not been so used. An increase in the ratio indicates greater sales without an

increase in the concerned asset. If fixed asset is acquired but it somehow remains ideal for any reason the turnover ratio for the asset will show a fall.

3. Working Capital Turnover Ratio :

The Working Capital Turnover ratio is computed as follows:

Sales/ Working Capital Assets

This ratio is computed by dividing the net working capital into net sales. This indicates the efficiency in the utilization of short term funds in making the sales. In the short run, current assets and current liabilities play a major role. A high working capital turnover may be the result of favourable turnover of inventories and receivables or may reflect an inadequacy of net working capital coupled with low turnover of inventories and receivables. Conversely, low turnover of working capital may be the result of excessive net working capital, slow turnover of inventories and receivables a large cash balance or investment of working capital in the form of temporary investments.

5. Analysis of Profitability of the Units Under Study :

Table : 5.1
Gross Profit Margin Ratio of the Units Uunder Study

(In Percentage)

Name of Unit	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	Average
Sabar	31.64	27.29	21.38	22.91	20.03	19.72	20.22	20.42	20.13	17.79	**22.15**
Dudhsagar	25.29	21.31	18.31	19.47	17.32	15.36	16.57	18.34	18.39	16.66	**18.70**
Banas	31.37	27.31	19.71	19.42	16.45	14.99	17.36	20.48	25.09	21.86	**21.40**
Sumul	14.78	14.75	14.83	14.21	13.83	14.65	14.98	14.51	14.91	13.73	**14.52**
Vasudhara	15.37	17.14	14.14	15.91	15.38	22.47	20.52	19.65	20.61	20.29	**18.15**
Dudh Dhara	28.44	20.35	19.35	20.47	22.77	21.80	23.62	23.36	25.35	20.11	**22.56**
Gopal	26.64	27.30	31.00	28.81	26.12	22.56	21.34	17.72	18.10	13.65	**23.32**
Baroda	26.08	24.25	22.41	22.70	23.76	24.48	23.41	24.76	22.99	22.56	**23.74**
Amul	26.92	25.21	23.38	27.36	26.92	26.10	26.07	24.64	22.38	21.81	**25.08**
Average Year -wise	**25.17**	**22.77**	**20.50**	**21.25**	**20.29**	**20.24**	**20.45**	**20.43**	**20.88**	**18.72**	**21.07**

Source: *Computed from Published Annual Reports of the Units*

The determination of this ratio is the gross profit and sales. Table 5.1 shows the gross profit ratio of **Sabar Dairy.** In **Sabar Dairy** the gross profit ratio declined from 31.64 percent in 1993-94 to 17.79 percent in 2002-03. The gross profit ratio declined due to heavy competition and high cost of procurement and transportation expenses. The gross profit ratio was 31.64 percent in 1993-94 which came down to 19.72 percent in 1998-99 except 1996-97. But it improved during next two years. Finally, it went down of 17.79 percent in 2002-03.

The gross profit ratio in **Dudh Sagar** witnessed decreasing trend during the first three years of the period under the review. It was 25.29percent in 1993-94 which came down to 16.66 percent in 2002-03.

Banas Dairy registered continuous decreasing trend during the first six years of the study period. It was 31.37 percent in 1993-94 which went down to 14.99 percent in 1998-99. But, after increased to 25.09 percent in 2001-02. Finally, it went down of 21.86 percent in 2002-03.

Gross profit ratio in **Sumul** dairy witnessed decreasing trend during the first five years except 1995-96. Than, the ratio had improved during next two years. It was 14.51 percent 2000-01 which went up to 14.91 percent 2001-02. Finally, it went down the lowest level of 13.73 percent in 2002-03.

In the **Vasudhara** the gross profit ratio increased from 14.14 percent in 1995-96 to 22.47 percent in 1998-99. The percentage of gross profit margin was 15.37 percent 1993-94 which went up to 17.14 percent 1994-95, it again decrease and went down to 14.14 percent in 1995-96. However, it increased to 22.47 percent in 1998-99 and further decreased to 20.29 percent in 2002-03.

The gross profit ratio of **Dudh-dhara** dairy was registered mixed trend during the period under study. It decreased during the first three years and increased in next two years and again decreased in 1998-99. Finally, it went down during the last four years except 2001-02, and the highest level of 28.44 percent in 1993-94.

Gross profit margin ratio in **Gopa**l dairy witnessed an increasing trend during the first three years of the period under review. It was 26.64 percent in 1993-94 which went up to 27.30 percent in 1994-95 and reached 31.00 percent in 1995-96. However, it decreased up to 17.72 percent in 2000-01. The ratio

improved again and rose up to 18.10 percent in 2001-02. Finally, it went down the lowest level, of 13.65 in 2002-03.

The gross profit margin ratio in **Baroda** dairy witnessed decreased trend during the first three years. The percentage of gross profit margin ratio was 26.08 in 1993-94 which came down to 22.41 percent in 1995-96, but went up to 22.70 percent in 1996-97. It was 23.76 percent in 1997-98 and went up to 24.48 percent in 1998-99. Against it decreased up to 23.41 percent in 1999-00 and increased in 2000-01 and than after went down to 22.56 percent 2002-03.

The gross profit margin ratio in **Amul** dairy witnessed decreased trend during the first three years of the period under review. It was 26.92 percent in 1993-94 which went down to 25.21 in 1993-94 and reached to 23.38 percent in 1995-96. It was 27.36 percent in 1996-97 and decreased to 21.81 percent, the lowest level in 2002-03.

Regression Analysis and Chi-Square Test of Gross Profit Ratio :

For establishing the relation of regression analysis of gross profit (y) on sales(x) has been used in the dairy units under study. On the basis of respective regression equations, the computed values of gross profit have been calculated. Thereafter, the chi-square(x^2) test has been used to decide, whether the differences between the actual value of gross profit and the computed value of gross profit are significant or not. If the calculated value of chi-square is greater than the table value of chi-square, the differences between actual values and calculated values are significant and the results are not as per our expectations while if the calculated value of chi-square is less then the table value of chi-square, the difference are significant and the results are as per our expectations.

The statement of null hypotheses (H_0) is taken that the differences between actual value of gross profit and calculated value of gross profit did not differ significantly, while the alternative hypothesis (H_1) is taken that the differences between actual values of gross profit and calculated value of gross profit differ significantly. To test these hypotheses, gross profit(y) on sales(x) and chi-square test have been presented in table 5.2 given below.

Table 5.2
Regression Analysis of Gross Profit and Chi-square Test in Dairy Units under study

(1993-94 to 2002-03) **(Rs. In Lakh)**

(A) Name of Unit : **Sabar Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Gross-Profit Actual	4460.50	4767.75	4547.76	5931.39	5839.04	6454.88	7673.40	7582.31	6984.61	7702.86
Gross-Profit Computed	4197.72	4639.48	5137.54	5743.01	6170.68	6639.28	7321.21	7215.49	6895.71	8024.46
Deviation	262.72	128.27	-589.78	188.38	-331.64	-184.40	352.19	366.82	88.90	-321.60

Calculated Value of Chi-Square (x^2) = 15.85

Table value of chi-square (x^2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Gross Profit(y) on Sales(x) is y = 0.131X+2350.932

(B) Name of Unit : **Dudh-Sagar Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Gross-Profit Actual	7375.91	7244.84	7508.04	8866.17	9313.87	10032.40	11382.07	12085.72	12246.10	12446.79
Gross-Profit Computed	6737.39	7337.59	8205.40	8768.34	9788.81	11218.16	11636.55	11294.53	11376.71	12386.23
Deviation	638.52	-92.75	-697.36	97..38	-474.94	1185.76	-254.48	791.19	869.39	60.56

Calculated Value of Chi-Square (x^2) = 40.45

Table value of chi-square (x^2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Gross Profit(y) on Sales(x) is y = 0.124X+3121.159

(C) Name of Unit: **Banas Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Gross-Profit Actual	2505.22	2939.44	3492.70	4336.34	4130.24	4907.68	5915.87	7280.50	9373.53	10062.50
Gross-Profit Computed	1776.85	2321.28	3684.41	4588.64	5132.18	6628.81	6890.30	7179.52	7532.90	9234.91
Deviation	728.37	618.16	-191.71	-252.30	-1001.94	-1721.13	-974.43	100.98	1840.63	827.59

Calculated Value of Chi-Square (x^2) = 182.13

Table value of chi-square (x^2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Gross Profit(y) on Sales(x) is y = 0.196X+211.817

(D) Name of Unit : **Sumul Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Gross-Profit Actual	1927.36	2194.69	2722.52	3331.42	3975.99	4249.27	4654.49	5000.42	5256.76	5241.61
Gross-Profit Computed	1944.30	2203.96	2695.00	3411.68	4160.23	4195.54	4486.06	4965.81	5076.83	5490.12
Deviation	-16.94	-9.27	27.52	-80.26	-184.24	53.73	168.43	34.61	179.93	-248.51

Calculated Value of Chi-Square (x^2) = 4.35

Table value of chi-square (x^2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Gross Profit(y) on Sales(x) is y = 0.141X+105.684

(E) Name of Unit : **Vasudhara Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Gross-Profit Actual	474.19	707.07	766.30	1105.87	1187.98	2184.37	2478.34	2679.06	3122.22	3570.89
Gross-Profit Computed	380.56	613.80	903.72	1246.44	1420.09	1867.19	2395.47	2742.85	3083.00	3631.46
Deviation	93.63	93.27	-137.18	-140.57	-232.11	317.18	82.87	-63.79	39.22	-60.57

Calculated Value of Chi-Square (x^2) = 12.40

Table value of chi-square (x^2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Gross Profit(y) on Sales(x) is y = 0.224X - 310.484

(F) Name of Unit: **Dudh-dhara Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Gross-Profit Actual	288.78	328.15	363.59	378.38	396.98	375.85	397.07	391.98	442.04	416.22
Gross-Profit Computed	296.70	367.75	399.53	395.89	383.33	381.06	375.93	375.58	383.36	422.14
Deviation	-7.92	-39.60	-35.94	-17.51	13.65	-5.21	21.14	16.40	58.68	-5.92

Calculated Value of Chi-Square (x^2) = 2.02

Table value of chi-square (x^2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Gross Profit(y) on Sales(x) is y = 0.119X + 175.881

(G) Name of Unit: **Gopal Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Gross-Profit Actual	273.40	346.25	464.13	503.19	565.61	605.98	795.70	812.10	916.30	925.70
Gross-Profit Computed	296.70	367.75	399.53	395.89	383.33	381.06	375.93	375.58	383.36	422.14
Deviation	-7.92	-39.60	-35.94	-17.51	13.65	-5.21	21.14	16.40	58.68	-5.92

Calculated Value of Chi-Square (x^2) = 8.29

Table value of chi-square (x^2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Gross Profit(y) on Sales(x) is y = 0.115X + 271.077

(H) Name of Unit : **Baroda Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Gross-Profit Actual	2099.40	2240.75	2399.03	2903.92	3251.27	3817.08	4118.56	4777.75	4675.49	5188.62
Gross-Profit Computed	1976.59	2243.00	2571.29	3039.04	3238.80	3666.03	4114.43	4495.03	4729.65	5325.54
Deviation	122.81	-2.25	-172.26	-135.12	12.47	151.06	4.13	282.72	-54.16	-136.92

Calculated Value of Chi-Square (x^2) = 5.30

Table value of chi-square (x^2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Gross Profit(y) on Sales(x) is y = 0.224X + 173.446

(I) Name of Unit: **Amul Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Gross-Profit Actual	8855.00	8686.10	8891.75	10946.35	11235.28	12065.10	12700.24	12546.56	10489.61	10652.04
Gross-Profit Computed	8705.10	9015.28	9727.09	10121.88	10465.18	11360.54	11853.95	12292.75	11488.58	11877.75
Deviation	149.90	-329.18	-835.34	824.47	770.10	704.56	846.29	253.81	-998.97	-1225.71

Calculated Value of Chi-Square (x^2) = 54.99

Table value of chi-square (x^2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Gross Profit(y) on Sales(x) is y = 0.199X + 2159.84

It is clear from table 5.2 that differences in between actual value of gross profit and computed values of gross profit are not significant in Sabar dairy, Sumul dairy, Vasudhara dairy, Dudh-dhara dairy, Gopal dairy and Baroda dairy because the calculated value of chi-square(x^2) were the lower than the table value of chi-square(x^2) at 5% level of degrees. The calculated values of chi-square(x^2) were in 15.85, 4.35, 12.40, 2.02, 8.29 and 5.30 respectively against the table value of chi-square(x^2) was 16.92. Hence, the null hypotheses against the table value of chi-square(x2) were accepted and the results were as per expectations while alternative hypothesis was rejected.

However, the difference in between actual values of gross profit and computed values of gross profit were significant in **Dudh-sagar** dairy, **Banas** dairy, **Amul** dairy as the calculated values of chi-square (x^2) of theses dairy units were 40.45, 182.14 and 54.99 respectively which were higher than the table value (x^2=16.92) at 5% level (d.f.=9) of significance. Hence, the null hypothesis was rejected and the results were not as per expectations while the alternative hypothesis was accepted.

Table : 5.3
Net Profit Margin Ratio of the Units Under Study

(In Percentage)

Name of Unit	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	Average
Sabar	0.26	0.27	0.23	0.23	0.43	0.97	1.71	1.76	0.64	0.43	0.69
Dudhsagar	0.24	0.21	0.18	0.21	0.21	0.31	0.42	0.57	0.46	0.36	0.32
Banas	0.19	0.15	0.16	0.27	0.37	0.46	0.67	0.02	0.27	0.3	0.29
Sumul	0.06	0.05	0.06	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.06
Vasudhara	-0.73	0.08	0.04	0.07	-2.36	0.91	0.12	0.18	-1.24	0.12	-0.28
Dudh Dhara	2.99	1.06	0.24	0.09	1.11	0.23	-3.15	-0.49	1.04	0.4	0.35
Gopal	-6.11	-0.24	2.64	0.44	0.76	-1.08	0.91	0.05	1.16	0.29	-0.12
Baroda	0.33	0.11	0.11	0.09	0.1	0.13	0.14	0.17	0.19	0.19	0.16
Amul	0.12	0.15	0.16	0.18	0.24	0.22	0.21	0.25	0.31	0.40	0.22
Average Year-wise	**-0.29**	**0.2**	**0.42**	**0.18**	**0.1**	**0.25**	**0.12**	**0.29**	**0.32**	**0.28**	**0.19**

Source: *Computed from Published Annual Reports of the Units*

Net Profit Margin ratio :

The determination of this ratio is the net profit after taxes and sales. Table 5.3 shows the net profits in relative terms as percent of sales. In the **Sabar** dairy , net profit margin ratio was ranged from 0.23 percent in 1995-96 to 1.76 percent in 2000-01. It registered mixed trend during the period under study. It was 0.26 percent in 1993-94 went up to 0.27 percent in 1994-95. However, it decreased to 0.23 percent in 1996-97. The ratio again improved and rose up to 1.76 percent in 2000-01. Finally, it went down to 0.43 percent in 2002-03.

In **Dudhsagar** dairy, the net profit margin ratio registered a fluctuating trend during study period. It showed decreased trend up to 1995-96 as 0.18 percent in 1995-96 against 0.24 percent in 1993-94, but percentage had gone up in 1996-97 and reached to 0.57 percent in 2000-01. Finally, it went down to 0.36 percent in 2002-03.

In **Banas** dairy, the percentage varied from 0.02 in 2000-01 to 0.67 in 1999-00. It showed fluctuating trend. The lowest level of the ratio of 0.02 in 2000-01 was due to higher financial expenses. The percentage of net profit margin ratio was 0.19 in the year 1993-94 which came down to 0.15 percent in 1994-95. But, it improved well thereafter .The net profit margin ratio was 0.16 percent in 1995-96 which went up to 0.67 in 1999-00. But after decreasing, the lowest level to 0.02 in 2000-01. Finally, it went up to 0.30 percent in 2002-03.

In case of **Sumul** dairy the net profit margin ratio was in the range (0.05 to 0.07%) during the period under study.

As far as **Vasudhara** dairy is concerned, the net profit margin ratio has averaged – 0.28 percent during the period under study. The ratio was negative during the year 1993-94, 1997-98 and 2001-02. It was -0.73 percent ,-2.36 percent and -1.24 percent respectively. It represents the in ability to earn sufficient profit to cope up with the fixed and variable expenses. The ratio was negative 0.73 percent in the year 1993-94. It was due to high procurement cost and high marketing expenses. In the 1997-98 due to high procurement, processing and marketing expenses. In the year 2001-02 there was loss due to high procurement and processing expenses. The percentage of net profit ratio was the highest of 0.91 percent due to better sales and the high miscellaneous income.

The net profit margin ratio in **Dudh-dhara** dairy witnessed downward trend during the first four years. The ratio was negative during the year 1999-00 to 2000-01. Though the ratio turned to positive thereafter and was 1.04 percent in 2001-02, which decreased to 0.40 percent in 2002-03. The loss was in the year 1999-00 due to higher processing and personnel expenses.

A **Gopal** dairy registered fluctuating trend throughout the study period except 1993-94, 1994-95 and 1998-99. The net profit margin ratio was 2.64 percent, the highest level during 1995-96. In 1993-94 and 1994-95 the ratio were negative due to higher processing and personnel expenses. In 1998-99 the ratio was negative due to high procurement cost.

The net profit ratio in **Baroda** dairy witnessed decreased trend up to 1996-97, but again showed an increasing trend in the remaining years. The net profit ratio was satisfactory during the period under study.

In the **Amul** dairy net profit ratio ranged from 0.12 percent in 1993-94 to 0.40 percent in 2002-03. It showed an increasing trend up to 1997-98. It was 0.22 percent in the year 1998-99 and 0.21 percent in 1999-00 and went up to 0.40 percent in the 2002-03. The net profit ratio was quite satisfactory, but it showed a fluctuating trend.

The inter-firm comparison of net profit to sales represents that **Vasudhara** and **Gopal** dairy a losses during the three years of study period. But, in 2002-03 all the unit made profit. The percentage of average of Sabar dairy was recorded higher in comparison. The net profit ratio of **Dudh-sagar**, **Banas** and **Amul** was satisfactory.

Regression Analysis and Chi-Square Test of Net Profit :

For establishing the relation of regression analysis of net profit (y) on sales(x) has been used in the dairy units under study. On the basis of respective regression equations, the computed values of net profit have been calculated. Thereafter, the chi-square(x^2) test has been used to decide, whether the differences between the actual value of net profit and the computed value of net profit are significant or not. If the calculated value of chi-square is greater than the table value of chi-square, the differences between actual values and calculated values are significant and the results are not as per our expectations

while if the calculated value of chi-square is less then the table value of chi-square, the difference are significant and the results are as per our expectations.

The statement of null hypotheses (H_0) is taken that the differences between actual value of net profit and calculated value of net profit did not differ significantly, while the alternative hypothesis (H_1) is taken that the differences between actual values of net profit and calculated value of net profit differ significantly. To test these hypotheses, net profit(y) on sales(x) and chi-square test have been presented in table 5.4 given below.

Table 5.4

Regression Analysis of Net Profit and Chi-square Test in Dairy Units under study

(1993-94 to 2002-03) (Rs. In Lakh)

(A) Name of Unit : **Sabar Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Net-Profit Actual	37.28	47.60	48.77	59.13	124.75	316.87	647.25	653.09	222.96	184.49
Net-Profit Computed	-20.43	35.82	99.24	176.33	230.78	290.45	377.28	363.82	323.10	466.82
Deviation	57.71	11.78	-50.47	-117.20	-106.03	26.42	269.97	289.27	-100.14	-282.33

Calculated Value of Chi-Square (x2) = 118.64

Table value of chi-square (x2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Net Profit(y) on Sales(x) is y = 0.01668X-255.578

(B) Name of Unit : **Dudh-sagar Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Net-Profit Actual	69.78	72.09	73.06	97.15	112.48	200.41	291.34	377.03	308.36	266.39
Net-Profit Computed	28.24	58.57	102.43	130.88	182.46	254.70	275.84	258.56	262.71	313.73
Deviation	41.54	13.52	-29.37	-33.73	-69.98	-54.29	15.50	118.47	45.65	-47.34

Calculated Value of Chi-Square (x2) = 16.25

Table value of chi-square (x2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Net Profit(y) on Sales(x) is y=0.006267X-154.527

(C) Name of Unit : **Banas Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Net-Profit Actual	15.09	16.25	27.91	59.87	92.14	149.76	226.63	6.09	101.07	136.35
Net-Profit Computed	14.55	24.58	49.70	66.37	76.38	103.96	108.78	114.11	120.62	151.99
Deviation	0.54	-8.33	-21.79	-6.50	15.76	45.80	117.85	-108.02	-19.55	-15.64

Calculated Value of Chi-Square (x2) = 35.04

Table value of chi-square (x2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Net Profit(y) on Sales(x) is y=0.003612X-14.293

(D) Name of Unit : **Sumul Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Net-Profit Actual	7.45	7.45	10.54	12.15	15.94	17.75	19.51	20.71	21.85	28.62
Net-Profit Computed	5.96	7.35	9.97	13.79	17.78	17.97	19.52	22.08	22.67	24.88
Deviation	1.49	0.10	0.57	-1.64	-1.84	-0.22	-0.01	-1.37	-0.82	3.74

Calculated Value of Chi-Square (x2) = 0.16

Table value of chi-square (x2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Net Profit(y) on Sales(x) is y=0.0007521X-3.845

(E) Name of Unit : **Vasudhara Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Net-Profit Actual	-22.55	3.20	1.96	4.76	-182.34	88.92	14.43	24.34	-188.35	21.82
Net-Profit Computed	-14.83	-16.20	-17.91	-19.93	-20.96	-23.59	-26.70	-28.75	-30.75	-33.99
Deviation	-7.72	19.40	19.87	24.69	-161.38	112.51	41.13	53.09	-157.60	55.81

Calculated Value of Chi-Square (x2) = -310.79

Table value of chi-square (x2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Net Profit(y) on Sales(x) is y=0.00132X-10.757

(F) Name of Unit: **Dudh-dhara Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Net-Profit Actual	30.36	17.05	4.56	1.60	19.28	3.93	-52.99	-8.18	18.17	8.37
Net-Profit Computed	19.72	6.23	0.19	0.88	3.27	3.70	4.67	4.74	3.26	-4.10
Deviation	10.64	10.82	4.37	0.72	16.01	0.23	-57.66	-12.92	14.91	12.47

Calculated Value of Chi-Square (x2) = 102.78

Table value of chi-square (x2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Net Profit(y) on Sales(x) is y=0.0226X+42.668

(G) Name of Unit : **Gopal Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Net-Profit Actual	-62.70	-3.00	39.52	7.74	16.52	-29.07	33.80	2.39	58.89	19.55
Net-Profit Computed	-8.46	-6.46	-4.56	-2.49	0.99	5.31	13.96	21.05	25.03	39.28
Deviation	-54.24	3.46	44.08	10.23	15.53	-34.38	19.84	-18.66	33.86	-19.73

Calculated Value of Chi-Square (x2) = 104.03

Table value of chi-square (x2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Net Profit(y) on Sales(x) is y=0.008298X-16.981

(H) Name of Unit : **Baroda Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Net-Profit Actual	26.66	9.75	11.68	11.88	14.19	20.32	25.41	32.20	39.56	42.93
Net-Profit Computed	10.17	12.44	15.23	19.20	20.90	24.53	28.34	31.58	33.57	38.64
Deviation	16.49	-2.69	-3.55	-7.32	-6.71	-4.21	-2.93	0.62	5.99	4.29

Calculated Value of Chi-Square (x2) = 2.01

Table value of chi-square (x2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Net Profit(y) on Sales(x) is y=0.001904X-5.156

(I) Name of Unit : **Amul Dairy**

Year	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Net-Profit Actual	39.93	51.08	60.09	70.23	100.75	102.68	103.29	128.34	145.74	196.21
Net-Profit Computed	36.95	46.78	69.32	81.83	92.70	121.06	136.69	150.59	125.12	137.44
Deviation	2.98	4.30	-9.23	-11.60	8.05	-18.38	-33.40	-22.25	20.62	58.77

Calculated Value of Chi-Square (x2)= 6.15

Table value of chi-square (x2) at 5% level (d.f. = 9) = 16.92

Regression Equation of Net Profit(y) on Sales(x) is y=0.006303X-170.356

It is clear from table 5.4 that differences in between actual value of net profit and computed values of net profit are significant in **Sabar** dairy, **Banas** Dairy, **Dudh-dhara** dairy and **Gopal** dairy because the calculated value of chi-square(x^2) were higher than the table value of chi-square(x^2) at 5% level of degrees. The calculated values of chi-square(x^2) were in 118.64, 35.04, 102.78 and 104.03 respectively against the table value of chi-square(x^2) was 16.92. Hence, the null hypotheses against the table value of chi-square(x2) was rejected and the result were as per not expectations while alternative hypothesis was accepted.

However, the difference in between actual values of net profit and computed values of net profit were not significant in **Dudh-sagar**, **Sumul** dairy, **Vasudhara** dairy, Baroda dairy and **Amul** dairy as the calculated values of chi-square (x^2) of theses dairy units were 16.25, 0.16, -310.79, 2.01 and 6.15 respectively which were lower than the table value (x^2=16.92) at 5% level (d.f.=9) of significance. Hence, the null hypothesis was accepted and the results were as per expectations while the alternative hypothesis was rejected.

Table : 5.5

Return On Gross Capital Employed of the Units Under Study

(In Percentage)

Name of Unit	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	Average
Sabar	3.94	5.63	4.78	4.90	5.07	5.64	8.08	8.15	4.57	4.35	**5.51**
Dudhsagar	4.68	5.71	4.51	4.59	7.54	4.67	4.97	5.57	4.21	4.39	**5.08**
Banas	5.06	5.09	4.65	5.40	5.86	6.58	5.09	7.82	7.08	6.89	**5.95**
Sumul	3.87	5.38	4.08	4.26	4.63	4.56	4.95	4.61	3.80	3.34	**4.35**
Vasudhara	0.00	3.85	1.18	10.31	0.00	10.81	6.28	7.25	1.13	5.70	**4.65**
Dudh Dhara	13.00	8.07	6.15	5.44	9.91	9.53	0.00	1.80	4.63	2.71	**6.12**
Gopal	0.00	4.69	11.49	7.48	9.43	4.25	10.97	7.84	12.09	6.42	**7.47**
Baroda	6.58	4.23	3.00	4.32	6.59	6.76	6.65	7.50	8.85	5.35	**5.98**
Amul	5.39	3.68	3.52	4.11	6.67	6.64	6.62	6.51	6.27	5.62	**5.50**
Average Year -wise	**4.72**	**5.15**	**4.82**	**5.65**	**6.19**	**6.6**	**5.96**	**6.34**	**5.85**	**4.97**	**5.63**

Source: *Computed from Published Annual Reports of the Units*

Return on Gross Capital Employed:

The return on gross capital employed is the ratio of the earning to the gross capital employed. It gives the indication of the efficiency of the utilization of the assets as well as the intensity of utilization. The return on gross capital employed indicates how well management has used the funds supplied by the creditors and owners. The higher the ratio more efficient the enterprise is using entrusted to it. The ratio will also be helpful in inter-firm comparison within the same industry. The term Gross Capital Employed means the total of fixed assets and the current assets employed in the business. The numerator, i.e. net profit before interest and taxes has been taken for computing this ratio. The return on gross capital employed has been computed by dividing the profit before interest and taxes by the gross capital employed.

Table 5.5 shows the return on gross capital employed. The return on gross capital employed in **Sabar** dairy registered a fluctuating trend during the first four years but after that it had an increasing trend in the next four years. Finally the ratio decreased during 2001-02 and 2002-03 when it was 4.57 percent and 4.35 percent respectively. It has been on average 5.51percent ranging from 3.94 percent in 1993-94 to 8.15 percent in 2000-01.

Dudhsagar dairy witnessed fluctuating trend during study period. The ratio was 4.68 percent in 1993-94 which increased in 1994-95 and stood at 5.71 percent. It showed decrease in 1995-96 but after that it had an increasing trend in the next two years. After declining to 4.67 percent in 1998-99, it again improved and went up to 4.97 percent in 1999-00, and 5.57 percent in 2000-01. After declining to 4.21 percent in 2001-02 it again improved in 2002-03, stood at 4.39 percent.

The return on gross capital employed in **Banas** dairy registered a fluctuating trend during the study period. It has been on an average of 5.95 percent ranging from 5.06 percent in 1993-94 to 7.82 percent in 2000-01. It was 5.06 percent in 1993-94 which increased to 5.09 percent in 1994-95. After declining to 4.65 percent in 1995-96 it went up to 6.58 percent in 1998-99. It was 5.09 percent in 1999-00 and went up to 7.82 in 2000-01, the highest level. Finally, ratio decreased during the last two years and it stood at 6.89 percent in 2002-03.

In the **Sumul** dairy, the return on gross capital employed has been on an

average of 4.35 percent ranging from 3.34 percent in 2002-03 to 5.38 percent in 1994-95. It showed an increase in 1994-95. It was 4.26 percent in 1996-97 and reached to 4.63 percent in 1997-98. However, the ratio stepped down to 4.56 percent in 1998-99 which increased to 4.95 percent in 1999-00, but then it marked a decreasing trend. It stood at 3.34 percent in 2002-03 at the lowest level.

It is clear from the table 5.3 the return on gross capital employed in **Vasudhara** dairy was nil during 1993-94 and 1997-98 due to operating loss. The rate was 3.85 percent in 1994-95 which steeped down to 1.18 percent in 1995-96. It should be remarked here that the ratio improved during 1996-97, as compare to the previous year. It was nil in 1997-98 due to operating loss. However, the ratio steeped up to 10.81 percent in 1998-99, the highest level. After declining in 1999-00 it increased again in 2000-01 It stood at 7.25 percent. Finally it was 1.13 percent in 2001-02 which increased to 5.70 percent in 2002-03.

Dudhdhara dairy recorded a fluctuating trend in the return on gross capital employed during the first six years. The ratio was nil during 1999-00 because of heavy operating expenses. The ratio was 13.00 percent in 1993-94, but after that it had a decreasing trend up to 1996-97. The ratio was 9.91 percent in 1997-98 which steeped down to 2.71 percent in 2002-03.

The rate of return on gross capital employed in **Gopal** dairy was nil during 1993-94 due to operating loss. It was 4.69 percent in 1994-95 which increased in 1995-86 and stood at 11.49 percent. The ratio was 7.48 percent in 1996-97 which increased to 9.43 percent 1997-98. It again decreased to 4.25 percent in 1998-99 and increased to 10.97 percent in 1999-00. Finally ratio improved during 2001-02 in 12.09 percent and decreased to 6.42 percent in 2002-03.

In the **Baroda** dairy, the return on gross capital employed has been on an average 5.98 percent ranging from 3.00 percent in 1995-96 to 8.85 percent in 2001-02. The ratio was 6.58 percent in 1993-94 which decreased to 4.23 percent in 1994-95 and reached to 3.00 percent 1995-96. The ratio was 4.32 percent in 1996-97 which increased to 6.59 percent in 1997-98 and reached to 6.76 percent 1998-99. It was 6.65 percent in 1999-00 which increased to 7.50 percent in

2000-01 and reached to 8.85 percent in 2001-02. Finally the ratio was 5.35 percent in 2002-03.

Amul dairy recorded a fluctuating trend in the return on gross capital employed during the period under study. It has been on an average 5.50 percent ranging from 3.68 percent in 1994-95 to 6.64 percent in 1998-99. It was 5.39 percent in 1993-94 which steeped down to 3.68 percent in 1994-95 and reached to 3.52 percent in 1995-96. It was 4.11 percent in 1996-97 which steeped up 6.67 percent in 1997-98. Finally there was continuous down ward trend during the last five years. It was 6.64 percent in 1998-99 which decreased to 5.62 percent in 2002-03.

'F'-TEST of ROI on Gross Capital Employed :

When it is believed that two various independent factor (Year , Dairy) has an effect on response variable of interest, two way "F" test is used to analyze the difference due to the effects of two factor simultaneously. A null hypothesis is taken that the difference appeared is not significant. Alternative hypothesis is taken that the difference appeared is significant.

When calculated value is greater than table value of "F" null hypothesis is rejected and alternative hypothesis is accepted. When calculated value is lower than the table value of "F" null hypothesis is accepted and alternative hypothesis is rejected.

The statements of hypothesis are as under:

H_0 ROI on gross capital do not differ significantly between the years.

H_1 ROI on gross capital differ significantly between the years.

H_0 ROI on gross capital do not differ significantly between the dairies.

H_1 ROI on gross capital differ significantly between the dairies.

Table 5.6

'F'- TEST of ROI onc Gross Capital Employed

Source of Variation	Sum of Squares	d.f.(V)	Mean Square	'F' Ratio
Between years	36.545	9	4.061	0.619
Between Dairies	67.733	8	8.467	1.290
Residual	472.518	72	6.563	
Total SS	576.796	89		

Table Value V1=9 and V2=72 = 2.10 at 5% level.

Table Value V1=8 and V2=72 = 2.10 at 5% level.

Table 5.6 represents the difference in ROI on gross capital in years is not significant because table value (2.10) is greater than calculated value (0.619) so null hypothesis is accepted i.e**. there is no significant difference among the years so far ROI in gross capital is concerned**.

Same way table value (2.10) is greater than calculated "F" (1.290) value for dairies and so here also null hypothesis is accepted i.e. **there is no significant difference in ROI on gross capital among various dairies.**

Table : 5.7

Return On Net Capital Employed of the Units Under Study

(In Percentage)

Name of Unit	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	Average
Sabar	6.77	8.48	7.24	8.57	10.26	12.24	16.93	16.07	8.62	8.22	**10.34**
Dudhsagar	8.60	13.00	9.65	7.74	18.29	12.33	12.37	11.58	11.10	11.72	**11.64**
Banas	7.85	8.81	8.21	10.00	10.35	12.49	7.83	10.51	9.38	9.34	**9.48**
Sumul	6.68	10.36	8.98	10.89	12.04	12.14	13.23	12.47	11.79	10.49	**10.91**
Vasudhara	-2.24	5.49	1.61	15.42	-3.06	16.61	8.97	11.07	1.56	7.08	**6.25**
Dudh Dhara	16.21	11.49	8.12	7.45	13.35	12.72	-1.51	2.32	6.15	4.09	**8.04**
Gopal	-10.63	6.58	15.17	9.97	12.76	6.19	17.07	12.01	18.41	11.61	**9.91**
Baroda	10.82	8.25	5.02	7.82	10.94	10.87	12.55	14.93	25.48	17.49	**12.42**
Amul	8.59	4.81	4.51	5.04	8.21	8.38	8.41	8.47	7.84	6.91	**7.12**
Average Year -wise	**5.85**	**8.59**	**7.61**	**9.21**	**10.35**	**11.55**	**10.65**	**11.05**	**11.15**	**9.66**	**9.57**

Source: *Computed from Published Annual Reports of the Units*

Return on Net Capital Employed:

The return on net capital employed shows the profitability of the owners' investment and long term liabilities. It helps to compare the profitability of the business. It is also an indicator of proper utilization of net capital employed towards achieving desirable profit. The ratio is more appropriate for evaluating the efficiency of internal management. It enables the management to show whether the fund entrusted to enterprise has been properly used or not. A higher ratio is a test of better performance and a low ratio is an indication of poor performance. This ratio is the most important for studying the management efficiency of the enterprise. It is used to study the operational efficiency of the enterprise. It shows the earning capacity of the net capital employed. Net Capital Employed is the total of fixed assets and current assets minus current liabilities or shareholders' fund plus long term liabilities. Return on net capital employed has been computed by dividing the net profit before interest and taxes by net capital employed.

Table 5.7 shows the return on net capital employed. In the **Sabar** dairy, the return on net capital employed has been on average of 10.34 percent ranging from 6.77 percent in 1993-94 to 16.93 percent in 1999-00. It was 6.77 percent in 1993-94 which increased to 8.48 percent in 1994-95. It was 7.24 percent in 1995-96 and shown a rising trend from 1996-97 to 1999-00. It showed a progressive trend in the funds utilization. Later, it showed a decreasing trend during the last three years. It was 16.07 percent in 2000-01 which decreased to 8.62 percent in 2001-02 and stood at 8.22 percent in 2002-03.

The rate of return on net capital employed in **Dudhsagar** dairy represented a fluctuating trend during the period under review. The return on net capital employed has been on average of 11.64 percent ranging from 7.74 percent in 1996-97 to 18.29 percent in 1997-98. It was 8.60 percent in 1993-94. It showed an increase in 1994-95 but after that it had a decreasing trend during next two years. It was 18.29 percent, the highest level in 1997-98, which decreased to 12.33 percent in 1998-99. The ratio was 12.37 percent in 1999-00 which decreased to 11.10 percent in 2001-02. Finally it improved to 11.72 percent in 2002-03.

In the **Banas** dairy, the return on net capital employed has been on an

average of 9.48 percent ranging 7.85 percent in 1993-94 to 12.49 percent in 1998-99. In 1993-94, the ratio was 7.85 percent which went up to 8.81 percent in 1994-95 and declined in 1995-96. It was 10.00 percent in 1996-97 which went up to 10.35 percent in 1997-98 and reached to 12.49 percent in 1998-99. It was 7.83 percent in 1999-00 which steeply went up 10.51 percent in 2000-01 and thereafter declined during the last two years. It was 9.38 percent in 2001-02 which declined to 9.34 percent in 2002-03.

Sumul dairy recorded a fluctuating trend in the return on net capital employed during the first seven years but after that it had a decreasing trend in the subsequent years. It ranged between 6.68 percent in 1993-94 and 13.23 percent in 1999-00. In 1993-94, the ratio was 6.68 percent which went up to 10.36 percent in 1994-95 and declined in 1995-96. It was 10.89 percent in 1996-97 which continuously increased during the next three years. Finally it went down to 12.47 percent in 2000-01 and went down to 10.49 percent in 2002-03.

The return on net capital employed in **Vasudhara** dairy registered a fluctuating trend during the study period. The ratio was nil during the 1993-94 and 1997-98 due to operating loss and higher amount of expenditures. The ratio was 5.49 percent in 1994-95 which decreased in 1995-96 and stood at 1.61 percent which shows the mismanagement of net capital employed. The ratio was increased at rocketing speed in 1996-97 and stood at 15.42 percent which turned to zero at 1997-98. Again, the ratio was 16.61 percent the highest level in 1998-99 which decreased to 8.97 percent in 1999-00. Finally it improved to 11.07 percent in 2000-01 which decreased to 1.56 percent in 2001-02 and went up to 7.08 percent in 2002-03. The ratio was below 2.00 percent in 1995-96 and 2001-02 due to heavy marketing and financial expenses.

Dudhdhara recorded decreasing trend during the first four years of the study period with respect to the rate of return on net capital employed. The percentage was nil in 1999-00 due to higher operating expenses. It was 7.45 percent in 1996-97 which increased to 13.35 percent in 1997-98 and decreased to 12.72 percent in 1998-99. It was 2.32 percent in 2000-01 and increased to 6.15 percent in 2001-02 lastly decreased to 4.09 percent in 2002-03.

Gopal dairy recorded nil rate of return on net capital employed in the

first year and fluctuating trend during remain period under review. It was 6.58 percent in 1994-95 which increased in 1995-96 when it was 15.17 percent. The ratio decreased to 9.97 percent in 1996-97 which went up to 12.76 percent in 1997-98. It was 6.19 percent in 1998-99 which increased to 17.07 percent in 1999-00. Finally it was 12.01 percent in 2000-01 and which increased to 18.41 percent in 2001-02 and went down to 11.61 percent in 2002-03.

The return on net capital employed in **Baroda** dairy averaged 7.12 percent during the period under review, minimum and maximum ratio being 5.02 percent in 1995-96 and 25.48 percent in 2001-02 respectively. It showed fluctuating trend during the period under review. It was 10.82 percent in 1993-94 which went down to 5.02 percent in 1995-96. After rising up to 7.82 percent in 1996-97 the ratio was 10.94 , 10.87 and 12.55 percent in 1997-98, 1998-99 and 1999-00 respectively. Finally it went up to 14.93 percent in 2000-01 which increased to 25.48 percent in 2001-02 and decreased to 17.49 percent in 2002-03.

The ratio of return on net capital employed in **Amul** dairy ranged between 4.51 percent in 1995-96 and 8.59 percent in 1993-94 reflected a fluctuating trend during the study period. It was 8.59 percent in 1993-94 which declined to 4.81 percent in 1994-95 and reached to 4.51 percent in 1995-96. The ratio was 5.04 percent in 1996-97 which increased during next three years subsequently. It was 8.38 percent in 1998-99 which went up to 8.41 percent in 1999-00 and reached to 8.47 percent in 2000-01. Finally it was 7.84 percent in 2001-02 and decreased to 6.91 percent in 2002-03.

All the units recorded return on net capital employed except Vasudhara, Dudhdhara and Gopal dairy during the study period. Regarding the consolidated average of return on net capital employed, the ratio ranged from 7.12 percent in Amul dairy to 12.42 percent in Gopal dairy. The consolidated ratio showed a fluctuating trend during the period under review. On the basis of the above findings the dairy units should try to improve their rate of return on net capital employed by making proper utilization of the assets employed in the unit and reducing operating expenses.

“F” TEST of ROI on Net Capital Employed :

The table 5.8 represents the ‘F’ test in Dairy units under study. The statements of hypothesis are as under:

H_0 ROI on net capital do not differ significantly between the years.

H_1 ROI on net capital differ significantly between the years.

H_0 ROI on net capital do not differ significantly between the Dairies.

H_1 ROI on net capital differ significantly between the Dairies.

Table 5.8

“F” test of ROI on Net Capital Employed

Source of Variation	Sum of Squares	d.f.(V)	Mean Square	‘F’ Ratio
Between years	262.376	9	29.153	1.294
Between Dairies	342.663	8	42.833	1.902
Residual	1621.525	72	22.521	
Total SS	2226.564	89		

Table Value V1=9 and V2=72 = 2.10 at 5% level.

Table Value V1=8 and V2=72 = 2.10 at 5% level.

It is clear from the table 5.8 that the difference in ROI on net capital in years is not significant because table value (2.10) is greater than calculated value (1.294) so null hypothesis is accepted i.e. **there is no significant difference among the years so far ROI in net capital is concerned.**

Same way table value (2.10) is greater than calculated “F” (1.902) value for dairies and so here also null hypothesis is accepted i.e. **there is no significant difference in ROI on net capital among various dairies.**

Table : 5.9
Return on Shareholders' Fund Employed of the Unit Under Study

(In Percentage)

Name of Unit	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	Average
Sabar	2.34	2.94	2.95	3.33	6.26	12.21	18.42	16.28	5.47	4.48	**7.47**
Dudhsagar	3.76	3.74	3.64	4.67	4.79	6.92	7.32	9.05	7.33	6.26	**5.75**
Banas	1.82	1.83	2.66	4.21	4.39	5.51	7.95	0.19	3.07	4.04	**3.57**
Sumul	1.16	1.06	1.41	1.40	1.78	1.87	2.04	1.93	2.02	2.08	**1.67**
Vasudhara	-7.98	0.99	0.53	1.21	-76.53	25.65	3.40	4.33	-33.19	3.43	**-7.82**
Dudh Dhara	25.00	11.71	2.92	1.00	10.43	2.16	-40.47	-2.29	4.25	1.80	**1.65**
Gopal	-80.83	-2.89	26.07	4.91	9.24	-19.05	17.77	1.21	22.53	6.81	**-1.42**
Baroda	3.99	1.39	1.60	1.59	1.84	2.54	2.86	3.46	4.10	4.19	**2.76**
Amul	1.49	0.96	0.96	0.95	1.33	1.33	1.31	1.60	1.79	2.31	**1.40**
Average Year -wise	**-5.47**	**2.41**	**4.75**	**2.59**	**-4.05**	**4.35**	**2.29**	**3.97**	**1.93**	**3.93**	**1.67**

Source: *Computed from Published Annual Reports of the Units*

Return on Shareholders' fund or Net worth:

The return on net worth indicates the profitability of owners' investments. Equity shareholders are the real owners of the company, performance of its operations is judged on the basis of return earned on equity shareholders' fund. This ratio reflects the productivity of the funds contributed by the equity shareholders. From the shareholders' point of view, this is the best overall measure of rate of return on the capital contributed by them, or owned by them. Thus, the ratio is an important tool for present and prospective investors and also great concern to management, which has the responsibility of the best guarding the owners' welfare. A higher ratio indicates the better utilization of owners' fund, higher productivity and favorable business conditions. The term Net Worth or Shareholders' funds include equity share capital, preference share capital and reserve and surpluses less accumulated losses, if any. The Return on shareholders' fund has been computed by dividing the net profit after interest and taxes by net worth.

Table 5.9 presents the return on shareholders' fund. In **Sabar** dairy the return on shareholders' fund employed has been on average 7.47 percent ranging from 2.34 percent 1993-94 to 18.42 percent in 1999-00 during period under review. It showed an increasing trend during the first seven years and later went down. It was 2.34 percent in 1993-94 which increased year after year and reached to 18.42 percent in 1999-00 highest level. However, the ratio steeped down to 16.28 percent in 2000-01 which decreased to 5.47 percent in 2001-02 and reached to 4.48 percent in 2002-03.

Dudhsagar dairy recorded a fluctuating trend in the return on net worth during the period under review. The ratio was 3.76 percent in 1993-94, which decreased to 3.74 percent in 1994-95. It again decreased to 3.64 percent in 1995-96 and went up to 4.67 percent in 1996-97 and reached to 4.79 percent in 1997-98. It was 6.92 percent in 1998-99 which went up to 7.32 percent in 1999-00 and reached to 9.05 percent in 2000-01. Finally it was 7.33 percent in 2001-02 reached to 6.26 percent in 2002-03.

The return on shareholders' fund in **Banas** dairy registered an increasing trend during the first seven years and later decreasing during the last three years. The ratio was 1.82 percent in 1993-94 than increased year after year and

reached to 7.95 percent the highest level in 1999-00. After declining to 0.19 in 2000-01 which improved 3.07 percent in 2001-02 ,and reached to 4.04 percent in 2002-03.

Sumul dairy witnessed a fluctuating trend during the study period. The ratio has been on an average 1.67 percent ranging from 1.06 percent in 1994-95 to 2.08 percent in 2002-03. It was 1.16 percent in 1993-94 which decreased to 1.06 in 1994-95. It was 1.41 percent in 1995-96 and went down to 1.40 percent in 1996-97. It was 1.78 percent in 1997-98 which went up to 1.87 percent in 1998-99 and reached to 2.04 percent in 1999-00. Finally the ratio decreased to 1.93 percent in 2000-01 and improved to 2.02 percent in 2001-02 and reached to 2.08 percent in 2002-03.

The rate of return on net-worth in **Vasudhara** dairy was nil during 1993-94, 1997-98 and 2001-02. It was due to net loss and higher payment of processing expenses. It was 0.99 percent in 1994-95 which decreased to 0.53 percent in 1995-96. It was 1.21 percent in 1996-97 and turned to nil in 1997-98. It was 25-65 percent in 1998-99 and went down to 4.33 percent in 2000-01 and turned to zero in 2001-02. Finally it improved to 3.43 percent in 2002-03.

Dudhdhara witnessed a decreasing trend during the first four years of study period. It was 25.00 percent in 1993-94 which decreased to 1-00 percent in 1996-97. It was 10.43 percent in 1997-98 which went down to 2.16 percent in 1998-99 and turned to zero during 1999-00 and 2000-01 due to net loss. Finally it improved to 4.25 percent in 2001-02 which decreased to 1.80 percent in 2002-03.

The rate of return on net worth was nil during 1993-94, 1994-95 and 1998-99 in **Gopal** dairy due to net loss. It was 26.07 percent in 1995-96 which decreased to 4.91 percent in 1996-97. Again it improved to 9.24 percent in 1997-98 which turned to negative (zero) in 1998-99. It was 17.77 percent in 1999-00 and went down to 1.21 percent in 2000-01. Finally it improved to 22. 53 percent in 2001-02 this decreased to 6.81 percent in 02-03.

In the **Baroda** dairy, the return on equity shareholders' fund had been on average 2.76 percent ranging from 1.39 percent in 1994-95 to 4.19 percent in 2002-03. It was 3.99 percent in 1993-94 which went down to 1.39 percent in 1994.95. It was 1.60 percent in 1995-96 which decreased to 1.59 percent in

1996-97. It was 1.84 percent in 1997-98 which went up 2.54 percent in 1998-99 and reached to 4.19 percent in 2002-03. It was progressive trend during the last year. It is good sign for unit.

In the **Amul** dairy, the return on equity shareholders' fund had been on a average 1.40 percent ranging from 0.95 percent 1996-97 to 2.31 percent in 2002-03. It was 1.49 percent in 1993-94 which decreased to 0.96 percent remained constant in 1994-95 and 1995-96. It was 0.95 percent in 1996-97 which went-up to 1.33 percent and remain constant in 1997-98 and 1998-99. Finally it improved during the last four years. It was 1.31 percent in 1999-00 which reached to 2.31 percent in 2002-03.

Thus, it can be generalized on the basis of above analysis the management of **Vasudhara**, **Dudhdara** and **Gopal** during years of loss on account is ineffective and inefficient production and sales and higher expenses. These units could not earn sufficient amount on borrowed funds. To improve the rate of return on net worth It can be suggested that the unit could try to improve sales and decrease expenses.

"F" TEST of Return on Share Holders' Fund :

The table 5.10 represents the 'F' test in Dairy units under study. The statements of hypothesis are as under:

$H_{0=}$ROI on shareholders' fund do not differ significantly between the years.

H_1=ROI on shareholders' fund differ significantly between the years.

$H_{0=}$ROI on shareholders' fund do not differ significantly between the Dairies.

H_1=ROI on shareholders' fund differ significantly between the Dairies.

Table 5.10

"F" test of Return on Share holders' Fund

Source of Variation	Sum of Squares	d.f.(V)	Mean Square	'F' Ratio
Between years	1014.140	9	112.682	0.462
Between Dairies	1546.474	8	193.309	0.792
Residual	17574.786	72	244.094	
Total SS	20135.4	89		

Table Value V1=9 and V2=72 = 2.10 at 5% level.

Table Value V1=8 and V2=72 = 2.10 at 5% level.

It is clear from the table 5.10 the difference in ROI on shareholders' fund in years is not significant because table value (2.10) is greater than calculated value (0.294) so null hypothesis is accepted i.e. **there is no significant difference among the years so far shareholders' fund is concerned.**

Same way table value (2.10) is greater than calculated "F" (0.792) value for dairies and so here also null hypothesis is accepted i.e. **there is no significant difference in ROI on shareholders' among various dairies.**

Table : 5.11
Total Asset Turnover ratio of the Unit Under Study

(In Times)

Name of Unit	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	Average
Sabar	1.78	2.81	2.93	2.75	3.36	3.11	3.19	3.15	3.10	4.18	**3.04**
Dudhsagar	2.22	3.58	3.97	2.97	4.01	4.26	4.20	3.75	3.02	3.50	**3.55**
Banas	2.39	2.87	3.52	3.46	3.54	3.88	2.69	2.09	1.94	2.13	**2.85**
Sumul	4.46	4.46	4.43	4.35	5.03	4.83	5.29	4.57	4.75	4.56	**4.67**
Vasudhara	3.55	4.35	5.34	6.09	3.84	4.43	4.32	4.84	4.39	4.06	**4.52**
Dudh Dhara	2.28	3.12	3.73	3.77	3.61	3.72	3.63	2.49	2.50	2.64	**3.15**
Gopal	1.75	1.98	2.21	2.51	2.92	3.58	4.14	4.80	4.96	5.64	**3.45**
Baroda	3.61	3.78	4.73	5.23	4.95	5.15	4.70	4.97	4.88	4.97	**4.70**
Amul	2.82	1.63	1.49	1.35	1.36	1.46	1.53	1.62	1.64	1.67	**1.66**
Average Year -wise	**2.76**	**3.18**	**3.59**	**3.61**	**3.62**	**3.82**	**3.74**	**3.59**	**3.46**	**3.71**	**3.51**

Source: *Computed from Published Annual Reports of the Units*

Total Assets Turnover Ratio :

Table 5.11 depicts the total asset turnover in selected dairy units. In **Sabar** dairy , turnover ranged from 1.78 times in 93-94 to 4.18 times in 2002-03, average being 3.04. It showed a progressive trend up to 1995-96, but it came down to 2.75 in 1996-97 and it again went up to 4.18 times, the highest point in 2002-03. The increase in sales was responsible for increase in total assets turn over ratio.

Dudhsagar dairy witnessed a fluctuating trend in total turn over ratio. It was 2.22 times in 1993-94 which stepped up to 3.97 times in 1995-96 but it stepped down in 1996-97. Again it stepped up to 4.01 times in 1997-98 and increased to 4.26 times the highest level in 1998-99. But thereafter it stepped down year after year during last three year. Due to increase in total assets.

The total asset turn over ratio in **Banas** dairy recorded an upward trend during the first six years except 1996-97. It was 2.39 times in 1993-94 which went up to 3.88 times in 1998-99. However, the ratio declined to 2.69 in 1999-00 and further to 1.94 times 2001-02. Finally It improved slightly in 2002-03 when it stood at 2.13 times. It was due to increase in sales.

The ratio in **Sumul** dairy showed a fluctuating trend during the study period. It remained constant during the first two years. It was 4.46 times in 1993-94 and 1994-95 which went down to 4.35 in 1996-97. It was 5.03 times in 1997-98 which went down to 4.57 times in 2000-01. Finally It increased to 4.75 times in 2001-02 which decreased to 4.56 times in 2002-03.

Vasudhara dairy witnessed a progressive trend during the first four years and after this period it was fluctuating trend in total asset turnover ratio. It was 3.55 times in 1993-94 which stepped up to 6.09 times in 1996-97 but thereafter stepped down in 97-98. Again it increased in 1998-99 than decreased to 4.32 times in 1999-00. It was 4.84 times in 2000-01 and thereafter it was decreasing during last two years, Which stood up to 4.06 in 2002-03.

The ratio in **Dudhdhara** dairy showed upward trend during the first four years and after this period it was fluctuating trend during the study period. It was 2.28 times in 1993-94 which went up to 3.77 in 1996-97. It went down slightly in 1997-98. Again it increased in 1998-99. It went down during the next

three years and was 2.50 times in 2001-02. Finally it improved to 2.64 in 2002-03.

The total asset turnover ratio in **Gopal** dairy recorded a upward trend during the period under study. It was 1.75 times in 1993-94 which went up to 5.64 times in 2002-03. It was due to increased in sale in assets. The reason responsible for continuous increase was constant increase in the sales.

Baroda dairy witnessed a upward trend during the first four years and after this period it was fluctuating trend during the study period. It was 3.61 times in 1993-94 which stepped up to 5.23 times in 1996-97, but it went down to 4.95 times in 1997-98. It was 5.15 times in 1998-99 which went down to 4.88 times in 2001-02. Finally, the ratio improved in 2002-03, when it stood at 4.97 times.

The ratio in **Amul** dairy showed an downward trend during the first four years and after this period it was upward trend during the remaining period. It was 2.82 times in 1993-94, which went down to 1.35 in 1997-98. Thereafter, it was increased during the last five years. It was 1.36 times in 1997-98 which increased to 1.67 times in 2002-03. The reason responsible for continuous increase was constant increase in the sales.

"F" TEST of Total Assets Turnover :

The table 5.12 represents the 'F' test in Dairy units under study. The statements of hypothesis are as under:

$H_{0=}$Total assets turnover not differ significantly between the years.

H_1=Total assets turnover differ significantly between the years.

$H_{0=}$Total assets turnover not differ significantly between the Dairies.

H_1=Total assets turnover differ significantly between the Dairies.

Table 5.12

"F" test of Total Assets Turnover

Source of Variation	Sum of Squares	d.f.(V)	Mean Square	'F' Ratio
Between years	8.105	9	0.901	1.907
Between Dairies	80.117	8	10.015	21.211
Residual	33.994	72	244.094	
Total SS	122.216	89		

Table Value V1=9 and V2=72 = 2.10 at 5% level.

Table Value V1=8 and V2=72 = 2.10 at 5% level.

It is clear from the table 5.12 that the difference in total assets turnover ratio in years is not significant because table value (2.10) is greater than calculated value (1.0907) so null hypothesis is accepted i.e. **there is no significant difference among the years so far total assets turnover is concerned.**

Same way table value (2.10) is lower than calculated "F" (21.211) value for dairies and so here also null hypothesis is rejected i.e. **there is significant difference in total assets turnover among the various dairies.**

Table : 5.13
Fixed Asset Turnover ratio iof the Unit under Study

(In Times)

Name of Unit	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	Average
Sabar	7.76	9.89	12.39	13.85	16.66	21.37	26.33	29.43	23.36	30.25	**19.13**
Dudhsagar	18.50	20.36	22.02	21.84	20.83	20.24	15.02	16.02	17.38	21.93	**19.41**
Banas	6.37	8.44	13.55	15.32	15.76	18.38	6.28	3.92	3.87	5.76	**9.77**
Sumul	16.97	16.28	13.25	15.17	17.56	18.19	21.47	24.32	22.21	21.79	**18.72**
Vasudhara	13.18	8.19	11.10	13.91	8.72	9.57	9.12	10.46	10.83	8.81	**10.39**
Dudh Dhara	3.00	4.63	5.39	5.57	5.52	5.34	5.44	3.66	3.23	3.81	**4.56**
Gopal	3.28	3.23	3.79	4.60	5.64	7.12	9.79	11.40	12.57	16.21	**7.76**
Baroda	10.01	11.33	13.05	15.15	11.68	12.47	13.30	16.03	18.08	18.80	**13.99**
Amul	11.71	3.07	2.65	2.33	2.49	3.01	3.43	3.91	3.97	4.65	**4.12**
Average Year -wise	**10.09**	**9.49**	**10.80**	**11.97**	**11.65**	**12.85**	**12.24**	**13.24**	**12.83**	**14.67**	**11.98**

Source: *Computed from Published Annual Reports of the Units*

Fixed Assets Turnover Ratio :

Table 5.13 depicts the fixed asset turnover in selected dairy units. FAT ratio is calculated to determine whether investment decision has been good or bad in the sense of their efficient utilization. A high ratio will show that the concern is over trading on its assets, while a low ratio will include that excessive investment have been made in fixed assets. It may noted that fixed assets are taken at written down value to avoid the effect of depreciation.

The FAT ratio of **Sabar** dairy showed progressive trend or even increasing trend due to corresponding increase in sales of milk every year except 2001-02, when it went down slightly as compared to its previous year figure due to higher rate of increase in fixed assets than that of sales. It was 7.76 times in 93-94 which increased to 29.43 times in 2000-01. The ratio declined to 23.36 times in 2001-02 and finally increased to 30.25 times in 2002-03. The reason responsible for continuous increase was constant increase in the sales, while the ratio declined during the year 2001-02 mainly due to addition of fixed assets worth RS. 223.76 lakhs.

The ratio in **Dudhsagar** dairy revealed an increasing trend during the first three years of the study period. It was 18.50 times in 1993-94 which increased to 22.02 times in 1995-96, highest level during the period under study. But the ratio dropped thereafter and went down to 21.84 times in 1996-97 and further declined to 17.38 times in 2001-02. Finally, increased to 21.93 times in the year 2002-03.

The FAT ratio in **Banas** dairy witnessed a progressive trend during the first six years and thereafter recorded a fluctuating trend during the period under review. It was 6.37 times in 1993-94 and 8.44 times in 1994-95, which stepped up to 18.38 times in 1998-99. The ratio decreased to 6.28 times in 1999-00 and 3.92 times in 2000-01, which stepped down to 3.87 times in 2001-02. Finally the ratio improved marginally in the year 2002-03 when it stood at 5.76 times.

The ratio in **Sumul** dairy witnessed downward trend during the first three years of the study period. It was 16.97 times in 1993-94 which decreased to 16.28 times in 1994-95 and reached to 13.25 times, the lowest level in 1995-96. But the ratio stepped up thereafter and went-up to 15.17 times in 1996-97

which increased to 18.19 in 1998-99 and reached to 24.32 times, the highest level in 2000-01. But after declining to 22.21 times in 2001-02, the ratio again declined to 21.79 times in 2002-03. The reasons responsible for the lowering the ratio were revolution of the fixed assets during 2001-02 and 2002-03, and expansion programme undertaken by the unit.

The FAT ratio in **Vasudhara** recorded a fluctuating trend during the period under review. It was 13.18 times in 1993-94 which stepped down to 8.19 times in 1994-95 while increased in 1995-96 and 1996-97 which reached to 13.91 times in 1996-97 at the highest level of the study period. It was 8.72 times in 1997-98. However it went up during the next four years and was 9.57 time in 1998-99 and 9.12 times in 1999-00 and 10.83 times in 2001-02. After decreasing to 8.81 times 202-03 due to addition of fixed assets worth Rs. 599.40 lakhs.

The FAT ratio in **Dudhdhara** witnessed a progressive trend during the first four years of the study period. It was 3.00 times in 1993-94 which stepped up to 4.63 times in 94-95, 5.39 times in 1995-96, and reached to 5.57 times in 1996-97. But after decreasing to 5.52 times in 97-98 and reached to 5.34 times in 1998-99. It was 5.44 times in 1999-00 which decreased to 3.66times in 2000-01 and 3.23 times in 2001-02 and finally increased to 3.81 times in 2002-03 due to increase in the sales.

Gopal dairy witnessed an increasing trend in the fixed assets turnover ration during the study period except for 1994-95. The ratio was 3.28 times in 1993-94. But after declining to 3.23 times in 1994-95, it went up to 3.79 times in 1995-96, 4.60 times in 1996-97, finally the ratio improved during next study period when it stood at 16.21 times in 2002-03 the highest level of study period due to increase in sales.

The ratio **Baroda** dairy witnessed a progressive trend during the first four years of the study period. It was 10.01 times in 1993-94 which stepped up to 11.33 times in 1994-95 and reached 13.05 times in 1995-96. But after increasing to 15.15 times in 1996-97, decreased to 11.68 times in 1997-98. But thereafter it recorded progressive trend during remaining part of study period. It was 12.47 times in 1998-99, which stepped up to 13.30 times in 1999-00, and reached to 16.03 times in 2000-01. Against it increased to 18.08 times in 2001-02 and finally increased to 18.08 times the highest level in 2002-03. The reason

responsible for continuous increase was constant increase in sales.

The FAT ratio in **Amul** dairy witnessed continuously an increasing trend from 1996-97 to 2002-03. It was 11.71 times in 93-94 which stepped down to 3.07 times in 94-95 and reached to 2.65 times in 95-96. But thereafter recorded a progressive trend during the period under review. It was 2.33 times in 96-97, which stepped up to 2.49 times in 97-98 and reached 3.01 times in 1998-99. Finally, it increased to 4.65 times in 02-03. Ratio declined during the year 94-95 as compared to 93-94 mainly due to addition of huge amount of fixed assets wroth Rs. 8405.19 lakhs. The reason responsible for continuous increase after fourth year was increase in the sales gradually.

The average FAT of Sabar, Dudhsagar , Sumul , Gopal, Baroda, Vasudhara workout more than 10 times. Out of Five dairy Sabar dairy give best footage because it has got the highest utilization of assets.

"F" TEST of Fixed Assets Turnover :

The table 5.14 represents the 'F' test in Dairy units under study. The statements of hypothesis are as under:

$H_{0=}$Fixed assets turnover not differ significantly between the years.

H_1=Fixed assets turnover differ significantly between the years.

$H_{0=}$Fixed assets turnover not differ significantly between the Dairies.

H_1=Fixed assets turnover differ significantly between the Dairies.

Table 5.14

"F" Test of Fixed Assets Turnover

Source of Variation	Sum of Squares	d.f.(V)	Mean Square	'F' Ratio
Between years	194.877	9	21.653	1.285
Between Dairies	2978.936	8	372.367	22.092
Residual	1213.599	72	16.856	
Total SS	4387.412	89		

Table Value V1=9 and V2=72 = 2.10 at 5% level.

Table Value V1=8 and V2=72 = 2.10 at 5% level.

It is clear from the table 5.14 that the difference in fixed assets turnover ratio in years is not significant because table value (2.10) is greater than calculated

value (1.285) so null hypothesis is accepted i.e. **there is no significant difference among the years so far fixed assets turnover is concerned.**

Same way table value (2.10) is lower than calculated "F" (22.092) value for dairies and so here also null hypothesis is rejected i.e. **there is significant difference in fixed assets turnover among the various dairies.**

Table : 5.15
Working Capital Turnover ratio of the Unit Under Study

(In Times)

Name of Unit	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	Average
Sabar	5.02	7.40	6.91	7.35	11.49	9.87	8.96	7.87	7.80	10.70	**8.34**
Dudhsagar	5.24	13.58	13.79	6.48	18.27	25.32	34.39	15.16	14.68	16.28	**16.32**
Banas	1.44	4.30	5.96	3.18	8.53	12.69	17.07	8.21	8.25	10.05	**2.85**
Sumul	14.14	18.17	36.93	41.64	51.37	44.17	41.31	25.08	43.90	41.81	**35.85**
Vasudhara	7.56	25.61	21.22	26.41	18.38	23.56	19.10	25.23	13.90	11.75	**19.27**
Dudh Dhara	56.31	111.97	56.20	72.19	41.41	70.58	113.51	26.80	-115.16	-46.04	**38.78**
Gopal	17.27	19.59	12.63	12.30	13.17	19.60	18.81	20.71	18.90	27.47	**18.05**
Baroda	14.66	21.07	20.13	25.37	27.66	24.67	26.59	25.87	62.96	118.72	**36.77**
Amul	7.27	7.01	6.76	5.77	5.13	4.72	4.47	4.59	4.24	3.68	**5.36**
Average Year -wise	**14.32**	**25.41**	**20.06**	**22.30**	**21.71**	**26.13**	**31.58**	**17.72**	**6.61**	**21.60**	**20.74**

Source: *Computed from Published Annual Reports of the Units*

Working Capital Turnover Ratio :

Table 5.15 depicts the working assets turnover in selected dairy units. Working Capital Turnover ratio gives an overall impression as to how frequently the investment in current assets is turn over. Funds invested in those assets are often circulating and they eventually become sources of funds for retiring current liabilities. This ratio is obtained net sales divided by current assets employed for a given period.

Table 5.15 shows the position regarding of current assets in the selected dairy units. The table reflects that the turnover in the **Sabar** dairy ranged from 5.02 times in 1993-94 to 11.49 times in 1997-98, the average being 8.34 times. It showed fluctuating trend throughout the study period. It was 5.02 times in 1993.94 which declined to 7.40 times in 1994-95 and reached 6.91 times in 1995-96. In 1997-98 it was 11.49 times the highest level and thereafter declined during the next four years. Finally it reached to 10.70 times in 2002-03. On the basis of above analysis it can be said that the generation of the sales with the use of the working capital was satisfactory except for 1993-94 in the unit.

The **Dudhsagar** dairy witnessed fluctuating trend in this ratio during the study period. It was 5.24 times in 1993-94 which stepped up to 13.58 times in 1994-95 and reached to 13.79 times in 1995-96. It came down to 6.48 times in 1996-97 due to heavy stock of milk pilling and milk products. There was considerable increase in this ratio for next three years, i.e. 1997-98, 1998-99 and 1999-00 due to decrease in assets. It again decreased and went down to 15.16 times in 2000-01 and reached to 14.68 times in 2001-02. Finally the ratio went up to 16.28 times in 2002-03 which was nearer to average.

The ratios in **Banas** dairy 1.44 times in 1993-94 and 17.07 times in 1999-00 showed a fluctuating trend. It was 1.44 times in 1993-94 and 4.30 times in 1994-95 which reached to 5.96 times in 95-96. After declining to 3.18 times in 1996-97 the ratio steeply went-up to 8.53 times in 1997-98 which increased to 12.69 times in 1998-99 and reached to 17.07 times in 1999-00. Again after declining to 8.21 times in 2000-01 the ratio stepped up 8.25 times in 2001-02 and reached to 10.05 times in 2002-03. In all it may be opinioned that working capital management of the unit was average except for the year 1993-94.

In **Sumul** the working capital turnover ratio ranged between 14.14 times in 1993-94 to 51.37 times in 1997-98 indicating fluctuating trend during the study period. It was 14.14 times in 1993-94 which stepped up during next three years. It was 51.37 times in 1997-98 which was the highest level during study period. The ratio declining to 44.17 times in 1998-99 and decreased to 25.08 in 2000-01. It was 43.90 times in 2001-02 which decreased to 41.81 times in 2002-03. On the basis of above analysis it can be said that the generation of sales with the use of working capital was excellent in the company.

The **Vasudhara** dairy registered fluctuating trend in the ratio of working capital which ranged between 7.56 times and 26.41 times during the study period. The ratio was 7.56 times in 1993-94 which increased to 25.61 times in 1993-94 and decreased during the year 1994-95.It was 21.22 times in 1995-96 which increased to 26.41 times in 1996-97. The ratio was 18.38 times in 1997-98 and increased to 23.56 times in 1998-99. Lastly, it was decreasing trend during last four years except 2000-01.It was 13.90 times 2001-02 which stepped down to 11.75 times in 2002-03. On the basis of above the capital management was satisfactory except 1993-94 during the period under review.

The **Dudhdhara** dairy witnessed a fluctuating trend in the working capital ratio during the study period. The ratio was nil during 2001-02 and 2002-03 which shows the absence of the working capital. It was 56.31 times in 1993-94 which increased at a rocketing speed in 1994-95 and was 111-97 times in the 1994-95. After declining to 56.20 times in 1995-96 it again improved and went up to 72.19 in 1996-97. It decreased to 41.41 times in 1997-98 which stepped up to 70.58 times in 1998-99 and reached to 113.51 times in 1999-00 showing the highest level among all the dairy units during study period. Finally the ratio dropped to 26.80 times in 2000-01. On the basis of above, the working capital management was not satisfactory and proper.

The working capital turnover ration in **Gopal** dairy ranged from 12.30 times in 1996-97 to 27.47 times in 2002-03, the average being 18.05 times. It showed fluctuating trend throughout the study period. It was 17.27 times 1992-93 which increased to 19.59 times in 1994-95. It was 12.63 times in 1995-96. After declining to 12.30 times in 1996-97 the ratio steeply went up to 13.17 in 1997-98 which increased to 19.60 times in 1998-99. It was 18.81 times in 1999-00 which

stepped up to 20.71 times in 2000-01. However, it again went-down to 18.90 times in 2001-02. Finally it improved and went up to 27.47 times in 2002-03 showing the highest level during study period. The unit was able to manage well from this point of view. The management of working capital was satisfactory and proper.

The working capital turnover ratio in **Baroda** dairy ranged between 14.66 times in 1993-94 and 118.72 times in 2002-03 showing a fluctuating trend during the period under review. It was 14.66 times in 1993-94 which stepped up to 21.07 times in 1994-95. However, it went up 25.37 times in 1996-97 and further went up to 27.66 times in 97-98. Again it was decreased to 24.67 times in 1998-99 which went up to 26-59 times. After dropping down to 25.87 times in 2000-01, it again went up 62.96 times in 2001-02 and reached to 118.72 times the highest point, in 2002-03. It went up due to decrease in working capital and increase in sales during 2002-03.

The working turnover ratio in **Amul** recorded down word trend during the period under review. It was 7.27 times in 1993-94 which went down to 7.01 times in 1994-95 and reached to 6.76 times in 1995-96. The ratio declined sharply during 1996-97 when it was 5.77 times but thereafter it continues to decrease. It was 5.13 times in 1997-98 which decreased to 4.72 time in 1998-99 and reached to 4.47 times in 1999-00. It was 4.59 times in 2000-01 which declined to 4.24 times in 2001-02 and reached to 3.68 times, the lowest level, in 2002-03. On the basis of above, working capital management was not satisfactory. It decreased year after year though the increase in sales during the study period.

"F" TEST of Working Capital Turnover :

The table 5.16 represents the 'F' test in Dairy units under study. The statements of hypothesis are as under:

$H_{0=}$ Working capital turnover not differ significantly between the years.

H_1 = Working capital turnover differ significantly between the years.

$H_{0=}$ Working capital turnover not differ significantly between the Dairies.

H_1 = Working capital turnover differ significantly between the Dairies.

Table 5.16
"F" Test of Working Capital Turnover

Source of Variation	Sum of Squares	d.f.(V)	Mean Square	'F' Ratio
Between years	101710.787	9	11301.199	1.225
Between Dairies	61858.829	8	7732.355	0.838
Residual	664093.861	72	9223.526	
Total SS	827663.477	89		

Table Value V1=9 and V2=72 = 2.10 at 5% level.

Table Value V1=8 and V2=72 = 2.10 at 5% level.

It is clear from the table 5.16 that the difference in working capital turnover ratio in years is not significant because table value (2.10) is greater than calculated value (1.225) so null hypothesis is accepted i.e. **there is no significant difference among the years so far working capital turnover ratio is concerned.**

Same way table value (2.10) is greater than calculated "F" (0.838) value for dairies and so here also null hypothesis is accepted i.e. **there is no significant difference in working capital turnover among the various dairies.**

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CHAPTER - VI

SUMMARY, CONCLUSIONS & SUGGESTIONS

1. Introduction
2. summary
3. Findings
4. Suggestions
    - References

CHAPTER - VI

SUMMARY, CONCLUSIONS & SUGGESTIONS

1. Introduction :

Dairy Industry is one of the key industries in India. The Indian dairy sector contributes a large share in the agricultural Gross Domestic Product (GDP). The future of the Indian Dairy Industry is promising and its growth potential is high as there is sufficient domestic demand and good scope for exports of milk and milk products. According to a consumer survey conducted by the NSSO, the consumption of livestock products, particularly milk has gained popularity in the last two decades both in the rural and urban areas. Sustained economic growth and increase in per capita income are expected to boost demand for milk and milk products substantially. There is a good export market for dairy products. Meeting domestic consumption growth and export demand to some extent, therefore, pose a particular challenge for the Indian Dairy Sector.

In the early 1990s the Government of India initiated major trade policy reforms, which favoured increasing privatization and liberalization of all sectors of the economy and dairy sector was no exception to this. Dairy industry particularly, the handling, processing and marketing of fluid milk, which was reserved mainly for the co-operative sector, was delicensed in June 1991. The private sector companies including multi-nationals were allowed to set up milk processing and product manufacturing plans. The second India became a member of the WTO. Both these developments indicate that sooner or later, the Indian dairy industry will have to face the world dairy markets. At the time in changing scenario Gujarat state is undergoing considerable modernization with latest technology. It will be right to study and analyse the performance of the district co-operative milk unions of Gujarat and to suggest measure to cost control and improve their profitability.

The present study deals with performance appraisal of co-operative dairy industry of Gujarat state which are engaged in processing and selling of milk and milk products. For these purpose nine leading co-operative dairy units are

selected which are associated with GCMMF. For analyzing the performance of dairy units of Gujarat state, the data related to all the nine district co-operative dairy units for the past ten years viz.1993-94 to 2002-03 have been collected and various techniques of measuring performance like CSS, Ratio analysis and several statistical techniques have been applied to analyze and drew conclusions. The present study has been divided in six chapters and chapter-wise finding have been discussed as here under.

2. Summary :

CHAPTER-I
History and Dairy Development in Gujarat

The co-operative movement started in India in the last decade of the 19th century with two objects in view, i.e. to protect the farmers' from the hands of the private money lenders and to improve their economic condition. The history of dairy development movement in India is a new one. During the pre-independence period this movement was limited to a few pockets of Calcutta, Madras, Bangalore and Gujarat. The most notable of this venture was The Khaira District Co-operative Milk Producers' Union Limited of **Anand**. It organized the first producers-oriented dairy in 1946. In 2002-03, there were 11,112 co-operative societies and 228000 members engaged in milk production in co-operative in Gujarat. There were 15 district level unions. Gujarat stands the first in acquiring the milk and marketing of liquid milk. The dairy industry made a considerable progress during last 10 years.

In spite of making a sound progress during the last 10 years, the co-operative dairy industry is still facing several problems like under utilization of capacity, labour problems, infrastructural problems, financial problems etc. and a result it has not developed as compared to other industry.

In the last 10 years, the government has taken several major steps like full decontrol of dairy industry, liberalization and several tax relaxations to improve the financial position of the industry as a whole

CHAPTER-II
Research Methodology and Conceptual Framework

The subject of the present study is **"A Performance Appraisal of a Dairy Industry in Gujarat"** which covers the period of the ten years from

1993-94 to 2002-03. This study covers the District Co-operative Milk Producers' Unions which are associated with the GCMMF. The study is based on secondary data published by DCMPUs in their annual Reports and Accounts. The main objective of the present study is to measure performance of the district co-operative milk producers' unions and to find out the various factors which affect the profitability. Accounting techniques Common size income statement and Value Added Statement are used to measure performance of the units. Various statistical measures like mean and index, regrations. analysis etc. has been based on chi-square test and "F" test have been applied to test the validity of two hypotheses namely (i) Null Hypothesis (ii) Alternate Hypothesis.

Finally, a survey of the existing literature on the subject has been made and the limitations of the present study have also been shown.

There are various concept of profit like the accounting profit, economic profit, the value added concept and economic value added. As per accounting concepts the profit means "profit as the excess of revenues over their total costs of during a given period". According to economic concept "The excess of revenue over related costs applicable to a transaction, a group of transaction of an operating profit is profit".

CHAPTER-III

Common Size Income Statement

In this chapter analysis of Common Size Income Statement has been analysed. For the measurement of profitability different component of financial statements are measured to a particular component. In this chapter definition, advantages and limitations of CSS have been given. Moreover, for the present study framework of analysis of CSS has been shown. A detail analysis of CSS of units under study has been discussed and after making inter firm comparison of units under study certain findings based on CSS of the units under study has been narrated.

CHAPTER - IV

Analysis of Value Added Statement

In this chapter analysis of Value Added has been discussed. It is truly said that " A firm can survive for a certain period without making profit but can not survive without adding value". Here meaning and definition of Value Added,

Gross Value Added and Net Value Added has been discussed. The meaning of Value Added Statement and merits and demerits of VAS has also been discussed. The various methods of preparing VAS and some basic concepts have also presented in this chapter. Finally, the analysis of generation and application of VA has been analysed for the units under study.

CHAPTER-V

Analysis of Profitability

In this chapter analysis of profitability of units under study has been explained. Here meaning of profitability, various measurement of profitability and framework of analysis of profitability has been discussed. Finally, analysis for profitability with the help of various ratios based on financial statements has been given. Here various statements of profitability has been tested with the help of F-Test. Moreover, here for gross profit margin ratio and net profit margin ratios on regression base chi-square test has been applied to test the validity of hypotheses.

3. Findings :

3.1 Common Size Income Statement :

A comparative study of the common size income statement of selected dairy units under study displayed the following facts.

(1) The procurement cost during 1997-98 was the highest in **Sumul** leaving **Vasudhara**, **Banas**, **Dudh-sagar** and **Sabar** behind. The percentage of average cost of procurement in **Sumul**, **Vasudhara**, **Banas**, **Dudhsagar** and **Sabar** were 86.17, 84.62, 83.55, 82.68 and 79.97 percent of sales respectively. The reasons for high procurement cost were (i) higher payment of milk per liter to milk producers and (ii) higher transportation expenses. In other dairy units under study the cost of procurement ranged between 75 percent and 80 percent of total sales.

(2) In **Gopal** dairy the percentage of miscellaneous income was the highest of 2.55 percent in 1993-94. This was because of larger amount received as interest and dividends on investments.

(3) The processing expenses takes share the second largest portion in the

total coat of sales of the dairy unit. It was the highest in **Amul** dairy of 12.71 percent in 2000-01 as compared to other units. It was due to higher excise and power & fuel expenses as compared to the previous year. The consolidated ratio of processing expenses of **Amul** is the highest of 11.03 percent of sales and In **Banas** it was the 10.32 percent of sales while it was always less than 10 percent of sales in the other dairy units under study.

(4) The personnel expenses share the third largest proportion in the total cost of sales. It was the highest of 12.70 percent of sales in 1994-95 in **Gopal** and the lowest in **Dudh-sagar** of 1.98 percent in 1997-98. **Dudh-sagar** and **Banas** dairy were paid lower amount of in form of salary and wages to employees during the period under study. The **Gopal** dairy paid the higher amount to employees in the form of salaries and wages throughout the study period.

(5) The amount paid to financiers in the form of interest was the highest in **Amul** throughout the study period in comparison to other dairy units. The percentage to the sales ranged between 1.70 percent in 1993-94 and 4.66 percent in 1997-98 in **Amul** dairy during the study period. While it was always less than 3 percent of the sales in other dairy units except **Banas** under study during all the years.

(6) The percentage of administrative expenses was the highest in **Dudh-dhara** which was 1.60 percent in 1994-95. However, the percentage of administrative expenses always less than 1.0 percentage in all other dairy units under study except **Vasudhara** in 2001-02 and **Gopal** in 1998-99 dairy.

(7) During the 1993-94 the **Vasudhara** dairy and **Gopal** dairy suffered losses. In **Vasudhara** dairy it was due to higher marketing expenses as compared to previous year. In **Gopal** dairy it was due to the processing and personnel expenses as compared to previous year. In 1994-95 **Gopal** dairy suffered losses due to high expenses of processing expenses and personnel expenses as compared to previous year. The personnel expenses were more than doubled to the previous year. In 1997-98 **Vasudhara** dairy was in losses due to high expenses of processing and marketing as compared to the previous year. In 1998-99 the **Gopal** dairy suffered again losses due

to higher procurement cost as compared to the previous year. In 1999-00 and 2000-01 **Dudh-dhara** dairy was in losses due to higher processing, personnel and financial expenses as compared to previous year. In 2001-02 **Vasudhara** dairy suffered losses due to higher expenses of processing and financial as compared to the previous year.

(8) On analysing the taxation front Sabar, **Dudh-dhara** did not spare any amount through out the study period for taxation while **Gopal** dairy also provided up to 1993-94 but than after provided a negligible amount of 0.01 percent of the sales. The **Amul** dairy provided taxes up to 1995-96.

(9) In 2002-03 all the dairy units were profitable position. It showed good indication of performance.

3.2 Analysis of Profitability :

(A) The accounting profitability was analyzed and interpreted with the help of profit margin ratio. The Gross profit margin ratio and Net profit margin ratio are calculated and analysed. A study of above ratio revealed the following observations:

1. The highest average gross profit margin ratio was recorded by **Amul** dairy with 25.08 percent of sales which was higher than the average of 21.07 percent of sales in all the nine units in combined position due to lower procurement cost. The ratio of gross profit margin was the highest in **Sabar** dairy in 1993-94 when it stood at 31.64 percent of sales during the study period of all dairy units under. The year wise average of gross profit margin ratio has been decreased during the study period due to higher procurement cost as compared to previous year.

2. Regression analysis of gross profit margin based on the use of chi-square(X^2) test makes it evident that the difference in between actual gross profits and computed profits were not significant in **Sabar, Sumul, Vasudhara, Dudhdhara, Gopal,** and **Baroda** dairy and the gross profits was satisfactory in above units. However, the differences were significant in **Dudh-sagar, Banas** and **Amul** which shows the results in these units were not as per expectations.

3. The ratio of net profit margin was the highest in **Sabar** dairy in 2000-01

when it stood at 1.76 percent of sales. **Sabar, Dudh-sagar, Banas, Sumul** and **Baroda** dairy were recorded positive net profit throughout the study period. **Gopal** dairy suffered losses during 1993-94, 1994-95 and 1998-99. **Vasudhara** dairy dairy suffered losses in 1993-94, 1997-98 and 2001-02. **Dudh-dhara** dairy suffered losses in 1999-00.

4. Regression analysis of net profit margin based on the use of chi-square(X^2) test makes it evident that the difference in between actual net profits and computed profits were not significant in **Dudh-sagar, Sumul, Vasudhara, Baroda** and **Amul** dairy and net profits was satisfactory in the above units. However, the differences were significant in **Sabar, Banas, Dudh-dhara** and **Gopal dairy** which shows the results in these units were not as per expectations.

(B) Return on investment is one of the most successful techniques for performance evaluation and decision making. It measures efficiency of assets management and efficiency of expenses control. The return on investment of various dairy units under study was analysed and findings are as follows.

1. The return on gross capital employed in all dairy units was positive during the study period except **Vasudhara** and **Gopal** dairy. The year wise average of ROI on gross capital decreased in all dairies under study during the last year of the study as compared previous year which shows not good for the in the years to come.

2. The result shown by "F" test reveals that the difference in ROI in gross capital is not significant at 5% level of significance in years and among the dairies.

3. The return on net capital employed in all dairy units was positive during the study period except **Vasudhara**, **Dudh-dhara**, **Gopal** dairy. The year wise average of ROI on net capital increased up to 1998-99 except 1995-96 compared previous year. It decreased in 199-00 and again increased in 2000-01 and 2001-02. Finally it decreased to 9.66 percent in 2002-03. The dairy wise average of ROI on net capital is the highest in **Baroda** dairy and the lowest ratio in **Amul** dairy.

4. The result shown by "F" test reveals that the difference in ROI in net capital is not significant at 5% level of significance in years and among the dairies.

5. The return on net worth (shareholders' fund) was nil in **Vasudhara** in 1993-94, 1997-98 and 2001-02 due to net losses. In **Dudhdhara** it was nil in 1999-00 and 2000-01. In **Gopal** dairy it was also nil 1993-94, 1994-95 and 1998-99 due to net losses. These units could not earn on borrowed funds a sum even to repay the interest there on. In 2002-03 all the units under study recorded the return on net worth in which the highest of 6.26 percent in **Dudh-sagar** and the lowest in **Dudhdhara** dairy. The consolidated ratio on net worth of all dairy units was 3.93 percent in 2002-03.

6. On the basis of result obtain from "F" test it may concluded that the difference among the dairy is not significant at 5% level of significant. There is no significant difference in ROI on net worth among the years.

(C) Turnover ratios indicate how efficiency the unit is managing its resources. This ratio shows the relationship between sales and the investment in various assets. Turnover ratios reflect the overall profitability of a unit to large extent. A study of various ratios of turnover revealed the following observations.

1. The total assets turnover ratio which indicates the effectiveness of utilization of assets recorded a fluctuating trend in all the dairy units except **Gopal** and **Amul.** In **Amul** up to 1996-97 there were decreasing trend and thereafter upward trend during the study period. In **Gopal** there was up ward trend during the study period.

2. There is no significant difference among the years so far total assets turnover is concerned. Same way table value (2.10) is lower than calculated "F" (21.211) value for dairies and so here also null hypothesis is rejected i.e. there is significant difference in total assets turnover among the various dairies.

3. The fixed assets turnover ratio which indicates the effectiveness of the utilization of fixed assets registering a fluctuation trend in all the dairy units under study. The ratio was the lowest (3.00 times) in **Dudhdhara** in 1993-

94 while it was the highest (30.25 times) in **Sabar** in 2002-03. The consolidated average ratio of **Sabar** is the highest as compared to other dairy units. The average ratio of all dairy units of last ten years was more than 10 times in **Sabar, Dudh-sagar, Sumul, Vasudhara** and **Baroda** dairy. They utilized its fixed assets properly.

4. There is no significant difference among the years so far fixed assets turnover is concerned. Same way table value (2.10) is lower than calculated "F" (22.092) value for dairies and so here also null hypothesis is rejected i.e. there is significant difference in fixed assets turnover among the various dairies.

5. The working capital turnover ratio in almost all the dairy units. It was negative in **Dudhdhara** during 2001-02 and 2002-03 owing to deficiency of working capital. In **Banas** the average ratio is the lowest which was 2.85 times as compared to other units. The **Banas** dairy was not able to manage it working capital properly.

6. There is no significant difference among the years so far working capital turnover ratio is concerned. Same way table value (2.10) is greater than calculated "F" (0.838) value for dairies and so here also null hypothesis is accepted i.e. there is no significant difference in working capital turnover among the various dairies.

4. **Suggestions :**

To make co-operative dairy industry more financially sound following suggestions can be made which are as under:

- The average procurement cost of units under study period is 78.93 percent. In **Dudh Sagar** dairy, **Sumul** dairy and **Vasudhara** dairy the average cost is higher. They are required to reduce procurement cost by reducing transportation expenses.
- Processing expenses of **Sabar** dairy,**Banas** dairy and **Amul** is required to reduce by controlling depreciation and processing expenses. Marketing expenses of **Sabar** dairy, **Banas** dairy and **Amul** dairy is higher. These units are required to reduce by reducing packaging expenses.
- Administrative expenses of **Vasudhara** dairy, **Dudh-dhara** dairy and **Gopal** dairy is higher than the average. Theyare required to reduce by

controlling co-operative development expenses.

- Personnel expenses of **Gopal** dairy is more than double of average of industry. In **Dudh-dhara** dairy and **Baroda** dairy is higher than the average. This situation is because of overstaffing in most of the units under study. Most of the appointments are made of relativeness of the management team. Likewise, banking industry, this industry required to introduce VRS for their employees which will result in reduction in the personnel expenses.
- Financial expenses of **Banas** dairy, **Dudh-dhara** dairy and **Amul** dairy is higher. These units are required to reduce it by reducing loans and creating capital from equity.
- The gross profit was not as per our expectation in **Dudh sagar** dairy, **Banas** Dairy and **Amul** dairy. These units are required to increase by increasing sales of various product and reducing the procurement cost.
- The net profit in **Sabar** dairy, **Banas** dairy, **Dudh-dhara** dairy and **Gopal** dairy is lower as compared to other units under study. They are required to increase by decreasing processing expenses, marketing expenses, and financial expenses.
- In **Amul** dairy the total asset turnover ratio is low as compared to other units under study. This shows that there is under utilization of assets. The idle assets should be amortized and volume of sales is required to increase.
- Co-operative dairies should be given maximum autonomy and there should be minimum government interference in a day to day working. For that self reliance and self management are required.
- To create sufficient funds from its members. They should be given attractive return on shareholders' funds.
- In co-operative dairy sector the cost of procurement is approximately 80 percent of the total sales. By reducing this cost profit can be increased. For this, proper infrastructural and transportation facility should be created. So that procurement cost can be controlled and reduced.
- Punctuality and neatness in all types of activities i.e. collection, processing marketing etc. should be improved which will improve the quality of the various milk products.

- To enhance profitability various strategic cost management techniques like Just In Time(JIT), Approach Activity Base Costing, Bench Marking should be adopted.
- In Gujarat, dairy industry has been developed in co-operative sector. These co-operative dairies are managed by the representatives of member of the milk producers' on democratic base. Hence political interference has become a major evil. Hence political interferences should be avoided.
- Cash budget showing details of receipts and payments should be prepared for each month, Excess cash should be invested in productive sources.
- The capital structure of the units should be re-organized by converting part of the loan into equity.
- Maintenance should be improved through skilled personnel. The concept of "Workers' Participations in Management" should be made applicable. Proper representations of workers should be allowed in management team by keeping certain management post reserved for employers representatives.
- To achieve the required rate of return, tools of financial management have to be brought in to play and relevant management techniques are required to adopt. One of the powerful management tools is the budget which should be properly implemented in the co-operative dairy units.

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Appendix - A

Sabarkantha District co-operative Milk Producers Union Ltd., Himmatnager

Condensed Balance Sheet (1993-94 to 2002-03)

Details	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Sabar Sales	14097.64	17469.80	21271.82	25893.72	29158.35	32735.50	37941.05	37134.01	34692.96	43309.41
Share capital	221.67	222.29	222.31	221.04	348.12	675.09	1016.69	1018.25	1018.49	1019.67
reserve & surpluses	1370.27	1398.23	1428.30	1552.09	1646.11	1919.73	2497.44	2992.15	3053.97	3098.79
Loans	3032.72	2505.36	3146.52	3618.30	2292.56	2252.97	2161.56	1967.05	1859.63	1362.35
Current liabilities	3313.82	2090.53	2466.27	4032.47	4395.03	5679.52	6218.03	5807.66	5261.19	4877.68
Total	**7938.48**	**6216.41**	**7263.40**	**9423.90**	**8681.82**	**10527.31**	**11893.72**	**11785.11**	**11193.28**	**10358.49**
Fixed assets	1815.82	1765.90	1717.08	1868.94	1750.01	1532.14	1440.75	1261.66	1485.42	1431.95
Investments	155.21	155.23	156.34	225.33	318.48	318.44	318.44	318.44	318.40	458.50
Stocks	3102.94	1812.35	1602.88	2487.82	2135.95	1936.09	1974.39	1639.58	4048.77	3107.49
Advances	2457.07	1870.08	3059.83	4551.50	2249.75	725.88	1856.48	4562.98	2190.22	667.09
Cash & Bank	407.44	612.85	727.27	290.31	2227.63	6014.76	6303.66	4002.45	3150.47	4693.46
Total	**7938.48**	**6216.41**	**7263.40**	**9423.90**	**8681.82**	**10527.31**	**11893.72**	**11785.11**	**11193.28**	**10358.49**
Working Capital	2808.84	2359.98	3080.05	3522.49	2536.78	3315.65	4234.94	4715.79	4446.67	4048.86
= Profit Before Interest & Tax	**312.93**	**349.97**	**347.31**	**462.12**	**439.95**	**593.54**	**960.73**	**960.37**	**511.29**	**450.70**
Taxation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Financial Expenses	275.65	302.37	298.54	402.99	315.20	276.67	313.48	307.28	288.33	266.21
= Profit After Tax	**37.28**	**47.60**	**48.77**	**59.13**	**124.75**	**316.87**	**647.25**	**653.09**	**222.96**	**184.49**
Total Asset Turnover	1.78	2.81	2.93	2.75	3.36	3.11	3.19	3.15	3.10	4.18
Fixed Asset Turnover	7.76	9.89	12.39	13.85	16.66	21.37	26.33	29.43	23.36	30.25
Current Assets Turnover	5.02	7.40	6.91	7.35	11.49	9.87	8.96	7.87	7.80	10.70
Return on Gross Capital En	3.94	5.63	4.78	4.90	5.07	5.64	8.08	8.15	4.57	4.35
Return on Net Capital Empl	6.77	8.48	7.24	8.57	10.26	12.24	16.93	16.07	8.62	8.22
Return On Shareholders' fu	2.34	2.94	2.95	3.33	6.26	12.21	18.42	16.28	5.47	4.48

Source: *Computed from Published Annual Reports of the Unit*

Appendix - B

Mehsana District co-operative Milk Producers Union Ltd., Mehsana

Condensed Balance Sheet (1993-94 to 2002-03)

Details	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Sales	**29163.13**	**34003.48**	**41001.97**	**45541.75**	**53771.39**	**65298.41**	**68672.47**	**65650.15**	**66406.26**	**74581.79**
Share capital	420.50	421.31	421.75	421.93	499.15	921.31	1818.39	1820.83	1825.16	1825.73
reserve & surpluses	1434.74	1507.31	1584.13	1659.91	1847.35	1973.72	2163.32	2344.24	2380.91	2429.73
Loans	5284.86	2245.73	2828.96	7028.05	3178.13	2910.45	2586.17	4263.69	4140.37	3725.44
Current liabilities	5995.76	5325.40	5500.57	6237.41	7879.56	9526.53	9774.95	9088.86	13676.68	13341.74
Total	**13135.86**	**9499.75**	**10335.41**	**15347.30**	**13404.19**	**15332.01**	**16342.83**	**17517.62**	**22023.12**	**21322.64**
Fixed assets	1576.59	1670.46	1862.11	2085.48	2581.14	3226.15	4571.19	4098.28	3821.35	3401.11
Investments	187.74	295.78	305.71	393.78	555.02	555.02	556.34	555.93	555.71	769.81
Stocks	6787.37	3650.48	3236.70	6803.49	6176.23	3208.39	3788.70	5600.00	8136.02	8410.45
Advances	3509.53	3137.12	4492.31	5760.81	3626.08	2593.53	6023.90	6638.57	9311.50	8212.51
Cash & Bank	1074.63	745.91	438.58	303.74	465.72	5748.92	1402.70	624.84	198.54	528.76
Total	**13135.86**	**9499.75**	**10335.41**	**15347.30**	**13404.19**	**15332.01**	**16342.83**	**17517.62**	**22023.12**	**21322.64**
Working Capital	**5563.51**	**2503.89**	**2972.73**	**7024.41**	**2943.49**	**2579.33**	**1996.69**	**4330.48**	**4525.09**	**4579.79**
= Profit Before Interest & Tax	614.18	542.64	466.38	705.00	1010.27	715.82	812.75	975.82	926.62	935.07
**Taxation	22.00	3.00	5.00	9.00	28.00	15.00	10.00	15.00	15.00	80.00
Financial Expenses	522.40	467.55	388.32	598.85	869.79	500.41	511.41	583.79	603.26	588.68
= Profit After Tax	69.78	72.09	73.06	97.15	112.48	200.41	291.34	377.03	308.36	266.39
Total Asset Turnover	2.22	3.58	3.97	2.97	4.01	4.26	4.20	3.75	3.02	3.50
Fixed Asset Turnover	18.50	20.36	22.02	21.84	20.83	20.24	15.02	16.02	17.38	21.93
Current Assets Turnover	5.24	13.58	13.79	6.48	18.27	25.32	34.39	15.16	14.68	16.28
Return on Gross Capital En	4.68	5.71	4.51	4.59	7.54	4.67	4.97	5.57	4.21	4.39
Return on Net Capital Empl	8.60	13.00	9.65	7.74	18.29	12.33	12.37	11.58	11.10	11.72
Return On Shareholders' fu	3.76	3.74	3.64	4.67	4.79	6.92	7.32	9.05	7.33	6.26

Source: *Computed from Published Annual Reports of the Unit*

Appendix - C

Banaskantha District co-operative Milk Producers Union Ltd., Palanpur

Condensed Balance Sheet (1993-94 to 2002-03)

Details	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Sales	**7984.86**	**10762.57**	**17717.29**	**22330.74**	**25103.87**	**32739.77**	**34073.87**	**35549.5**	**37352.47**	**46036.2**
Share capital	113.90	116.46	230.28	492.62	1065.83	1599.48	1607.30	2086.34	2088.64	2102.46
reserve & surpluses	713.45	769.65	817.97	929.89	1034.84	1117.44	1241.70	1100.76	1201.83	1275.06
Loans	1324.21	1276.78	1800.51	2061.96	1913.72	1726.42	5378.72	9498.33	11274.76	12571.59
Current liabilities	1184.75	1584.87	2183.78	2962.78	3084.93	3992.94	4436.29	4355.98	4731.04	5676.03
Total	**3336.31**	**3747.76**	**5032.54**	**6447.25**	**7099.32**	**8436.28**	**12664.01**	**17041.41**	**19296.27**	**21625.14**
Fixed assets	1253.38	1275.02	1307.29	1457.78	1593.28	1781.34	5427.78	9057.83	9640.79	7991.88
Investments	52.14	52.19	63.29	167.52	272.74	272.74	272.89	272.89	262.89	484.97
Stocks	1586.50	1487.02	1173.62	2380.22	3190.64	2064.47	2761.75	2778.32	6156.49	6967.79
Advances	414.87	920.71	2477.02	2433.74	2031.94	1799.31	3052.39	4436.50	2350.53	5812.53
Cash & Bank	29.42	12.82	11.32	7.99	10.72	2518.42	1149.20	495.87	885.57	367.97
Total	**3336.31**	**3747.76**	**5032.54**	**6447.25**	**7099.32**	**8436.28**	**12664.01**	**17041.41**	**19296.27**	**21625.14**
Working Capital	5563.51	2503.89	2972.73	7024.41	2943.49	2579.33	1996.69	4330.48	4525.09	4579.79
= Profit Before Interest & Tax	**168.83**	**190.58**	**233.89**	**348.36**	**415.68**	**554.83**	**644.14**	**1332.67**	**1366.31**	**1489.83**
Taxation	15.00	16.00	18.00	24.00	36.00	77.15	97.27	0.00	0.00	0.00
Financial Expenses	138.74	158.33	187.98	264.49	287.54	327.92	320.24	1326.58	1265.24	1353.48
= Profit After Tax	**15.09**	**16.25**	**27.91**	**59.87**	**92.14**	**149.76**	**226.63**	**6.09**	**101.07**	**136.35**
Total Asset Turnover	2.39	2.87	3.52	3.46	3.54	3.88	2.69	2.09	1.94	2.13
Fixed Asset Turnover	6.37	8.44	13.55	15.32	15.76	18.38	6.28	3.92	3.87	5.76
Current Assets Turnover	1.44	4.30	5.96	3.18	8.53	12.69	17.07	8.21	8.25	10.05
Return on Gross Capital Employed	5.06	5.09	4.65	5.40	5.86	6.58	5.09	7.82	7.08	6.89
Return on Net Capital Employed	7.85	8.81	8.21	10.00	10.35	12.49	7.83	10.51	9.38	9.34
Return On Shareholders' fund	1.82	1.83	2.66	4.21	4.39	5.51	7.95	0.19	3.07	4.04

Source: *Computed from Published Annual Reports of the Unit*

Appendix - D

Surat District co-operative Milk Producers Union Ltd., Surat

Condensed Balance Sheet (1993-94 to 2002-03)

Details	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Sales	**13039.8**	**14881.37**	**18363.96**	**23446.76**	**28755.63**	**29006.07**	**31066.52**	**34469**	**35256.35**	**38187.51**
Share capital	20.45	44.98	45.22	45.39	45.51	90.85	91.10	91.17	91.21	127.18
reserve & surpluses	621.11	659.52	703.65	821.93	849.47	856.64	864.45	984.46	992.15	1247.07
Loans	1049.25	1028.79	1134.21	1240.96	1302.56	1303.78	1243.23	1716.46	1307.20	1291.85
Current liabilities	1230.86	1606.85	2265.45	3287.96	3513.67	3749.66	3674.66	4753.14	5029.53	5699.84
Total	**2921.67**	**3340.14**	**4148.53**	**5396.24**	**5711.21**	**6000.93**	**5873.44**	**7545.23**	**7420.09**	**8365.94**
Fixed assets	768.49	914.17	1385.75	1545.16	1637.78	1594.64	1446.77	1417.57	1587.44	1752.70
Investments	116.12	117.64	189.60	321.35	418.49	315.67	324.92	425.90	350.37	477.53
Stocks	1033.92	1097.70	1713.20	1929.50	1342.18	1380.26	1766.25	2245.12	2122.65	2404.58
Advances	281.36	204.28	242.07	832.51	900.53	916.12	948.88	887.52	1092.52	1270.44
Cash & Bank	721.78	1006.35	617.91	767.72	1412.23	1794.24	1386.62	2569.12	2267.11	2460.69
Total	**2921.67**	**3340.14**	**4148.53**	**5396.24**	**5711.21**	**6000.93**	**5873.44**	**7545.23**	**7420.09**	**8365.94**
Working Capital	922.32	819.12	497.33	563.12	559.76	656.63	752.01	1374.52	803.12	913.40
= Profit Before Interest & Tax	**112.93**	**179.59**	**169.08**	**229.67**	**264.66**	**273.38**	**290.94**	**348.08**	**281.86**	**279.71**
**Taxation	0.00	20.00	10.00	5.00	20.00	20.00	10.00	15.00	15.00	20.00
Financial Expenses	105.48	152.14	148.54	212.52	228.72	235.63	261.43	312.37	245.01	231.09
Profit Before Tax	**7.45**	**7.45**	**10.54**	**12.15**	**15.94**	**17.75**	**19.51**	**20.71**	**21.85**	**28.62**
Total Asset Turnover	4.46	4.46	4.43	4.35	5.03	4.83	5.29	4.57	4.75	4.56
Fixed Asset Turnover	16.97	16.28	13.25	15.17	17.56	18.19	21.47	24.32	22.21	21.79
Current Assets Turnover	14.14	18.17	36.93	41.64	51.37	44.17	41.31	25.08	43.90	41.81
Return on Gross Capital Employed	3.87	5.38	4.08	4.26	4.63	4.56	4.95	4.61	3.80	3.34
Return on Net Capital Employed	6.68	10.36	8.98	10.89	12.04	12.14	13.23	12.47	11.79	10.49
Return On Shareholders' fund	1.16	1.06	1.41	1.40	1.78	1.87	2.04	1.93	2.02	2.08

Source: *Computed from Published Annual Reports of the Unit*

Appendix - E

Valsad District co-operative Milk Producers Union Ltd., Valsad

Condensed Balance Sheet (1993-94 to 2002-03)

Details	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Sales	3085.01	4126.28	5420.56	6950.54	7725.79	9721.77	12080.16	13630.97	15149.46	17597.96
Share capital	60.62	66.37	77.07	92.15	103.77	116.41	127.35	172.38	186.84	233.03
reserve & surpluses	221.94	257.42	289.41	300.79	134.49	230.23	296.96	390.05	380.64	402.31
Loans	359.40	341.29	377.41	369.98	1067.80	1082.02	1532.26	1280.99	1922.09	2860.15
Current liabilities	226.40	283.19	271.60	378.26	706.05	767.12	837.63	970.32	964.32	843.73
Total	**868.36**	**948.27**	**1015.49**	**1141.18**	**2012.11**	**2195.78**	**2794.20**	**2813.74**	**3453.89**	**4339.22**
Fixed assets	234.15	503.98	488.46	499.73	885.80	1015.99	1324.09	1303.13	1399.47	1998.07
Investments	57.00	27.00	37.00	67.00	91.05	91.00	124.00	119.00	119.07	157.62
Stocks	208.40	180.13	144.01	155.39	250.78	349.25	475.24	377.71	413.60	578.93
Advances	357.09	196.65	282.05	365.34	704.56	575.12	550.86	750.98	1232.24	1322.79
Cash & Bank	11.72	40.51	63.97	53.72	79.92	164.42	320.01	262.92	289.51	281.80
Total	**868.36**	**948.27**	**1015.49**	**1141.18**	**2012.11**	**2195.78**	**2794.20**	**2813.74**	**3453.89**	**4339.21**
Working Capital	407.81	161.10	255.43	263.19	420.26	412.67	632.48	540.29	1090.10	1497.41
= Profit Before Interest & Tax	**-14.40**	**36.52**	**11.97**	**117.62**	**-40.01**	**237.29**	**175.46**	**204.09**	**38.87**	**247.45**
Taxation	0.00	0.00	0.00	0.00	14.45	0.00	0.00	0.00	0.00	21.75
Financial Expenses	8.15	33.32	10.01	112.86	127.88	148.37	161.03	179.75	227.22	203.88
= Profit After Tax	**-22.55**	**3.20**	**1.96**	**4.76**	**-182.34**	**88.92**	**14.43**	**24.34**	**-188.35**	**21.82**
Total Asset Turnover	3.55	4.35	5.34	6.09	3.84	4.43	4.32	4.84	4.39	4.06
Fixed Asset Turnover	13.18	8.19	11.10	13.91	8.72	9.57	9.12	10.46	10.83	8.81
Current Assets Turnover	7.56	25.61	21.22	26.41	18.38	23.56	19.10	25.23	13.90	11.75
Return on Gross Capital Employed	-1.66	3.85	1.18	10.31	-1.99	10.81	6.28	7.25	1.13	5.70
Return on Net Capital Employed	-2.24	5.49	1.61	15.42	-3.06	16.61	8.97	11.07	1.56	7.08
Return On Shareholders' fund	-7.98	0.99	0.53	1.21	-76.53	25.65	3.40	4.33	-33.19	3.43

Source: *Computed from Published Annual Reports of the Unit*

Appendix - F

Bharuch District co-operative Milk Producers Union Ltd., Bharuch

Condensed Balance Sheet (1993-94 to 2002-03)

Details	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Sales	1015.28	1612.36	1879.41	1848.82	1743.30	1724.23	1681.12	1678.16	1743.51	2069.42
Share capital	10.20	12.13	15.01	18.88	24.72	29.67	34.00	38.14	41.70	46.49
reserve & surpluses	111.26	133.53	141.39	141.81	160.05	152.01	96.93	318.84	386.33	417.53
Loans	235.52	217.03	225.52	196.91	173.25	165.90	192.63	164.10	97.24	56.52
Current liabilities	88.19	153.74	122.37	132.38	124.29	116.27	139.62	151.76	173.09	263.85
Total	**445.17**	**516.43**	**504.29**	**489.98**	**482.31**	**463.85**	**463.18**	**672.84**	**698.36**	**784.39**
Fixed assets	338.95	348.29	348.48	331.99	315.92	323.15	308.76	458.46	540.41	542.49
Investments	10.56	10.56	10.56	14.56	17.56	17.56	17.56	25.06	25.56	2.56
Stocks	53.59	86.72	72.57	63.90	61.11	48.52	53.90	55.86	47.51	118.46
Advances	36.25	39.66	56.24	60.36	69.52	65.06	78.23	67.65	49.82	77.71
Cash & Bank	5.82	31.20	16.44	19.17	18.20	9.56	4.74	65.81	35.06	20.17
Total	**445.17**	**516.43**	**504.29**	**489.98**	**482.31**	**463.85**	**463.18**	**672.84**	**698.36**	**761.39**
Working Capital	18.03	14.40	33.44	25.61	42.10	24.43	14.81	62.62	-15.14	-44.95
= Profit Before Interest & Tax	**57.85**	**41.66**	**31.00**	**26.65**	**47.80**	**44.22**	**-4.88**	**12.11**	**32.33**	**21.29**
**Taxation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Financial Expenses	27.49	24.61	26.44	25.05	28.52	40.29	48.11	20.29	14.16	12.92
= Profit After Tax	**30.36**	**17.05**	**4.56**	**1.60**	**19.28**	**3.93**	**-52.99**	**-8.18**	**18.17**	**8.37**
Total Asset Turnover	2.28	3.12	3.73	3.77	3.61	3.72	3.63	2.49	2.50	2.64
Fixed Asset Turnover	3.00	4.63	5.39	5.57	5.52	5.34	5.44	3.66	3.23	3.81
Current Assets Turnover	56.31	111.97	56.20	72.19	41.41	70.58	113.51	26.80	-115.16	-46.04
Return on Gross Capital Employed	13.00	8.07	6.15	5.44	9.91	9.53	-1.05	1.80	4.63	2.71
Return on Net Capital Employed	16.21	11.49	8.12	7.45	13.35	12.72	-1.51	2.32	6.15	4.09
Return On Shareholders' fund	25.00	11.71	2.92	1.00	10.43	2.16	-40.47	-2.29	4.25	1.80

Source: *Computed from Published Annual Reports of the Unit*

Appendix - G

Rajkot District co-operative Milk Producers Union Ltd., Rajkot

Condensed Balance Sheet (1993-94 to 2002-03)

Details	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Sales	1026.31	1268.24	1497.17	1746.85	2165.56	2685.76	3728.34	4582.75	5062.39	6780.63
Share capital	36.25	37.51	39.47	35.52	38.11	40.90	39.17	43.97	47.23	57.13
reserve & surpluses	41.32	66.24	112.11	122.15	140.59	111.66	151.00	153.37	214.14	230.10
Loans	294.64	353.29	362.30	364.44	369.77	361.71	388.72	425.89	409.18	377.97
Current liabilities	214.48	184.91	164.61	173.51	193.67	235.39	321.60	331.17	350.52	537.95
Total	**586.69**	**641.95**	**678.49**	**695.62**	**742.14**	**749.66**	**900.49**	**954.40**	**1021.07**	**1203.15**
Fixed assets	312.77	392.31	395.32	380.07	384.10	377.24	380.66	401.97	402.67	418.38
Investments	11.07	11.11	11.11	16.11	22.12	22.12	22.11	22.11	22.11	87.82
Stocks	99.27	74.32	93.43	107.18	116.33	156.94	161.00	173.18	239.66	243.38
Advances	92.96	87.67	154.38	159.55	150.82	138.25	290.85	311.00	280.56	355.47
Cash & Bank	70.62	76.54	24.25	32.71	68.77	55.11	45.87	46.14	76.07	98.10
Total	**586.69**	**641.95**	**678.49**	**695.62**	**742.14**	**749.66**	**900.49**	**954.40**	**1021.07**	**1203.15**
Working Capital	59.44	64.73	118.56	142.04	164.37	137.03	198.23	221.26	267.88	246.82
= Profit Before Interest & Tax	**-39.55**	**30.08**	**77.94**	**52.04**	**70.00**	**31.85**	**98.80**	**74.86**	**123.45**	**77.21**
**Taxation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50
Financial Expenses	23.15	33.08	38.42	44.30	53.48	60.92	65.00	72.47	64.56	51.16
= Profit After Tax	**-62.70**	**-3.00**	**39.52**	**7.74**	**16.52**	**-29.07**	**33.80**	**2.39**	**58.89**	**19.55**
Total Asset Turnover	1.75	1.98	2.21	2.51	2.92	3.58	4.14	4.80	4.96	5.64
Fixed Asset Turnover	3.28	3.23	3.79	4.60	5.64	7.12	9.79	11.40	12.57	16.21
Current Assets Turnover	17.27	19.59	12.63	12.30	13.17	19.60	18.81	20.71	18.90	27.47
Return on Gross Capital Employed	-6.74	4.69	11.49	7.48	9.43	4.25	10.97	7.84	12.09	6.42
Return on Net Capital Employed	-10.63	6.58	15.17	9.97	12.76	6.19	17.07	12.01	18.41	11.61
Return On Shareholders' fund	-80.83	-2.89	26.07	4.91	9.24	-19.05	17.77	1.21	22.53	6.81

Source: *Computed from Published Annual Reports of the Unit*

Appendix - H

Rajkot District co-operative Milk Producers Union Ltd., Rajkot

Condensed Balance Sheet (1993-94 to 2002-03)

Details	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Sales	8049.76	9239.10	10704.65	12792.85	13684.63	15591.87	17593.66	19292.79	20340.18	23000.40
Share capital	57.26	69.34	69.27	82.81	98.14	114.13	133.04	154.33	176.02	201.63
reserve & surpluses	610.86	633.51	661.06	664.61	671.82	686.35	755.67	775.91	788.54	822.36
Loans	684.97	550.83	621.71	601.51	896.39	1081.53	1095.69	1018.97	483.36	393.01
Current liabilities	873.76	1192.94	909.87	1096.12	1099.09	1144.92	1759.91	1929.85	2721.91	3213.05
Total	**2226.85**	**2446.62**	**2261.91**	**2445.05**	**2765.44**	**3026.93**	**3744.31**	**3879.06**	**4169.83**	**4630.05**
Fixed assets	803.94	815.11	820.17	844.64	1171.56	1250.04	1322.76	1203.36	1124.85	1223.26
Investments	54.22	54.24	79.15	93.67	139.58	134.58	134.58	109.58	109.58	203.58
Stocks	567.02	799.70	934.04	723.98	910.22	650.67	761.79	762.71	744.00	995.27
Advances	296.18	284.13	255.51	487.66	391.64	508.75	735.40	562.17	817.10	741.92
Cash & Bank	505.49	493.44	173.04	295.10	152.44	482.89	789.78	1241.24	1374.30	1466.02
Total	**2226.85**	**2446.62**	**2261.91**	**2445.05**	**2765.44**	**3026.93**	**3744.31**	**3879.06**	**4169.83**	**4630.05**
Working Capital	549.15	438.57	531.87	504.29	494.79	631.97	661.64	745.85	323.07	193.74
= Profit Before Interest & Tax	**146.47**	**103.39**	**67.84**	**105.55**	**182.34**	**204.65**	**248.98**	**291.07**	**368.86**	**247.80**
**Taxation	35.00	10.00	0.00	0.00	8.40	10.00	15.00	30.00	50.00	55.00
Financial Expenses	84.81	83.64	56.16	93.67	159.75	174.33	208.57	228.87	279.30	149.87
= Profit After Tax	**26.66**	**9.75**	**11.68**	**11.88**	**14.19**	**20.32**	**25.41**	**32.20**	**39.56**	**42.93**
Total Asset Turnover	3.61	3.78	4.73	5.23	4.95	5.15	4.70	4.97	4.88	4.97
Fixed Asset Turnover	10.01	11.33	13.05	15.15	11.68	12.47	13.30	16.03	18.08	18.80
Current Assets Turnover	14.66	21.07	20.13	25.37	27.66	24.67	26.59	25.87	62.96	118.72
Return on Gross Capital Employed	6.58	4.23	3.00	4.32	6.59	6.76	6.65	7.50	8.85	5.35
Return on Net Capital Employed	10.82	8.25	5.02	7.82	10.94	10.87	12.55	14.93	25.48	17.49
Return On Shareholders' fund	3.99	1.39	1.60	1.59	1.84	2.54	2.86	3.46	4.10	4.19

Source: *Computed from Published Annual Reports of the Unit*

Appendix - I

Rajkot District co-operative Milk Producers Union Ltd., Rajkot

Condensed Balance Sheet (1993-94 to 2002-03)

Details	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Sales	32890.72	34449.43	38026.32	40010.22	41735.34	46234.63	48714.09	50919.13	46878.07	48833.67
Share capital	205.57	235.43	260.42	325.18	426.04	468.52	543.67	628.57	716.26	1034.18
reserve & surpluses	2468.58	5065.28	6003.51	7043.39	7128.14	7230.78	7361.97	7407.70	7445.42	7456.70
Loans	4658.58	10825.90	13708.61	16733.32	17379.71	17469.25	17178.34	16094.35	14699.79	15261.96
Current liabilities	4338.54	4965.69	5619.60	5500.84	5773.18	6586.15	6775.97	7278.51	5695.15	5476.18
Total	**11671.27**	**21092.30**	**25592.14**	**29602.73**	**30707.07**	**31754.70**	**31859.95**	**31409.13**	**28556.62**	**29229.02**
Fixed assets	2808.78	11213.97	14349.70	17169.75	16793.70	15376.26	14193.00	13032.57	11817.13	10499.60
Investments	210.92	1210.95	810.95	485.97	1007.86	1409.77	2216.47	1322.41	1357.33	990.13
Stocks	5046.98	3158.78	3722.07	7278.66	6111.47	4458.34	6730.49	7610.26	7427.63	7452.32
Advances	3345.40	2487.90	4457.01	3626.99	2678.68	3430.45	4519.82	6182.44	4639.04	8319.67
Cash & Bank	259.19	3020.70	2252.41	1041.36	4115.36	7079.88	4200.17	3261.45	3315.50	1967.30
Total	**11671.27**	**21092.30**	**25592.14**	**29602.73**	**30707.07**	**31754.70**	**31859.95**	**31409.13**	**28556.63**	**29229.02**
Working Capital	4523.95	4912.64	5622.84	6932.14	8140.19	9792.29	10890.98	11098.05	11044.35	13253.24
= Profit Before Interest & Tax	**629.59**	**776.19**	**901.10**	**1215.25**	**2046.82**	**2109.65**	**2109.08**	**2044.42**	**1791.71**	**1642.16**
**Taxation	31.50	30.00	40.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00
Financial Expenses	558.16	695.11	801.01	1095.02	1946.07	2006.97	2005.79	1916.08	1645.97	1445.95
Profit Before Tax	**39.93**	**51.08**	**60.09**	**70.23**	**100.75**	**102.68**	**103.29**	**128.34**	**145.74**	**196.21**
Total Asset Turnover	2.82	1.63	1.49	1.35	1.36	1.46	1.53	1.62	1.64	1.67
Fixed Asset Turnover	11.71	3.07	2.65	2.33	2.49	3.01	3.43	3.91	3.97	4.65
Current Assets Turnover	7.27	7.01	6.76	5.77	5.13	4.72	4.47	4.59	4.24	3.68
Return on Gross Capital Employed	5.39	3.68	3.52	4.11	6.67	6.64	6.62	6.51	6.27	5.62
Return on Net Capital Employed	8.59	4.81	4.51	5.04	8.21	8.38	8.41	8.47	7.84	6.91
Return On Shareholders' fund	1.49	0.96	0.96	0.95	1.33	1.33	1.31	1.60	1.79	2.31

Source: *Computed from Published Annual Reports of the Unit*

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